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THE FROZEN NORTH: CONTROLLING PHYSICIAN COSTS THROUGH CONTROLLING FEES - THE CANADIAN EXPERIENCE

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Chapter 1

The Reimbursement of Physicians in Canada

Introduction: Universal, Comprehensive Coverage with Cost Control

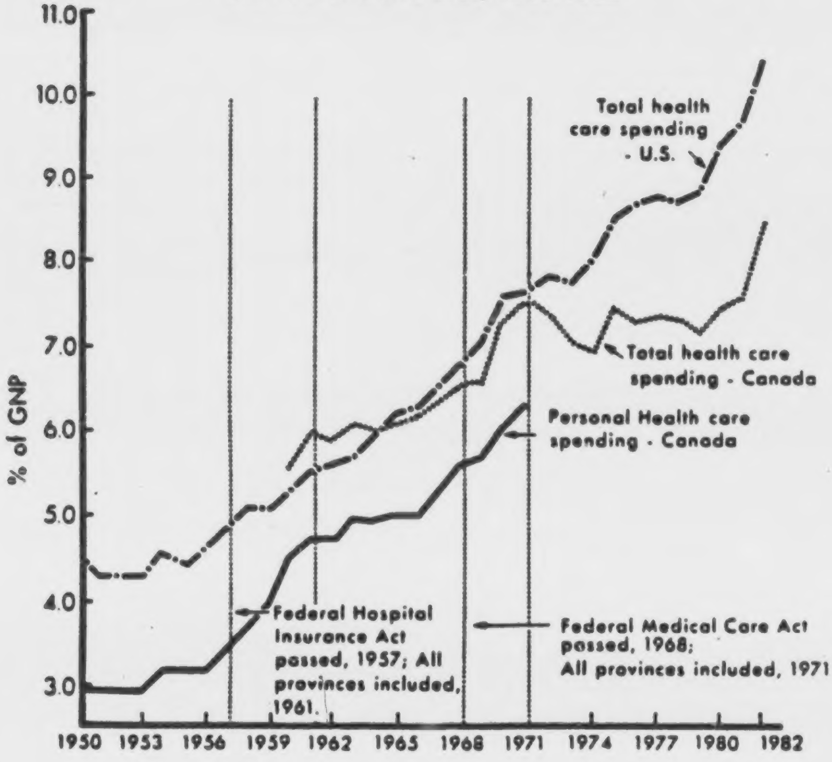
Canada is commonly described, particularly by external observers, as having a national health insurance system. Like all generalizations, however, this characterization is false, or at least misleading. The distinctively Canadian form of financing for health care is more accurately described as a federal-provincial system of public reimbursement for the costs of hospital and medical care. (It is sometimes less accurately described as "socialized medicine", an expression which has long since ceased to have any meaning, if it ever did, other than as a disapproving noise.)

However one describes it, the Canadian system has a good claim to being the most successful of the wide variety of ways of organizing the financing and delivery of health care which may be observed on the international scene. This claim can, of course, be contested, since both the criteria for success and the specific forms of evidence available and appropriate for evaluation are open to debate. What cannot be contested, however, is the simple observation that the Canadian system succeeds in providing universal and comprehensive coverage against the costs of hospital and medical care, to the whole population, at a cost which is substantially lower than that in most other developed countries and in particular much lower than that in the United States.

As Figure 1-1 shows, the extension to the entire population of

FIGURE 1–1

Health Care Spending as a Percentage of National Income, Canada and the U.S., 1950-1982



public coverage against medical care costs, which was completed by 1971, coincided with an obvious break in the pattern of escalation of health care costs as a share of national income and output. Prior to 1971, cost experience was virtually parallel in both Canada and the United States, reflecting very similar financing and delivery systems. After 1971 costs in Canada stabilized, while those in the U.S., as in most of the rest of the world, continued to escalate. By 1982 the gap between the two countries had reached two percentage points of GNP, (in 1982, in Canada, 2% of GNP was about $7 billion; in the U.S. over $60 billion), and was still growing. It is the message of Figure 1-1, perhaps more than anything else, which should motivate an interest in the Canadian system by any country concerned over uncontrolled escalation of health care costs. But the U.S. in particular, being similar to Canada in so many other ways, might find useful information as to how costs can in fact be controlled, if that is the objective.

In this process, the control of costs of physicians' services, and particularly the control of fees, plays a significant part, though quantitatively its impact is greatly outweighed by the effects of controls on hospital reimbursement. But it is of particular interest, since the Canadian experience bears directly on the question, frequently raised in U.S. policy discussions, of whether control of the levels of fees charged by physicians can serve to contain overall costs of their services.

Total costs being simply prices per service multiplied by volumes of services, it is apparent that if volumes are sufficiently flexible, any attempt to limit the escalation of prices, or even to force them down, may be offset by a sufficient expansion in volume. A number of students of the U.S. health care system have concluded that that is exactly what happens when attempts are made to regulate physicians' fees. Yet it is clear that in Canada the rate of escalation of costs of physicians' services has been controlled, relative both to its pre-universal insurance pattern, and to contemporaneous U.S. experience. Accordingly it is of interest to explore how this came about, and particularly the role played in the process by direct controls on fee levels. That is the main purpose of this paper.

In addition, however, we shall consider why the U.S. experience has been so different. It does not appear that the U.S. analysts are wrong in their observations, only in their generalizations. From this we shall try to identify what may be the critical distinctions between "successful" and "unsuccessful" limitations on fees (where "success" is measured in terms of effects on overall costs).

But to do so, we must begin with an explanation of what the system of health care finance and delivery in Canada actually is, in order to set in context the subsequent statistical presentations and discussion. The description is necessarily brief and incomplete; for more extended discussions of the Canadian system, its current characteristics and its historical evolution, the reader might consult the papers in Evans and Stoddart (1985), and particularly that by Taylor (1985) on recent administrative history. Taylor (1978) provides a comprehensive history and analysis of how the system was worked out and put in place over three decades, and of the underlying political and social forces.

Hatcher (1981) provides a survey with more specific statistical and institutional detail. The papers in Andreopoulos (1975), and particularly that by LeClair (1975), are still useful sources on how the system looked just after its completion. For a single short source, describing and analysing the system in totality, and its strengths and weaknesses, Evans (1983a) and Stoddart (1985) are useful.

Who Pays Whom, for What - and How Much?

The Canadian health insurance system is federal-provincial, rather than national, because the public reimbursement plans are run by each of the ten Canadian provinces. The federal government itself neither provides, nor reimburses the providers of, health care for the general population. It does have responsibility for certain selected categories - the armed forces and RCMP, convicts - as well as for services provided under various special-purpose federal statutes. Moreover the Medical Services Branch of the federal Department of National Health and Welfare provides services in remote regions and particularly to status Indians and Inuit. But the quantitative impact of these exclusions is not significant.

The location of responsibility for program operation at the provincial level is required by the Canadian constitution. The British North America Act of 1867 laid down the division of jurisdiction between the Canadian federal and provincial governments, and clearly defined matters relating to health as subject to provincial authority. While many other aspects of that division of authority have been called into question and juridically redefined over the years, the allocation of health has not. It is preserved in the new Canadian Constitution Act of 1983, and seems to be as clear as anything in that highly uncertain document can be.

Subject to the _caveat_ implicit in the previous sentence - that some decades, at least, of litigation will be required before it is possible to say what Canadian law may be - it should be noted that the division of powers in the Canadian constitutional structure is not a partition and sharing of sovereignty, as in the U.S. "checks and balances" philosophy and practice, but an allocation of fields of action for an absolute parliamentary sovereignty. One may question, legally, _which_ parliament, the federal or the provincial, has jurisdiction in a field. But once that question is settled, the sovereignty of the responsible parliament is absolute.

The new Charter of Rights attached to the constitution may throw this fundamental concept into disarray; but the Canadian health insurance system, like the country itself, pre-dates the present constitution, and the evolution of that system, particularly in contrast with U.S. experience, would be very difficult to comprehend independent of its context in a parliamentary system.

Nevertheless, the Canadian insurance system is _federal_-provincial, because despite the constitutional assignment, the federal government has played a major role in its establishment and subsequently at critical points in its history. The federal initiatives have been through conditional grants. Federal legislation, which forms the cornerstone of the system, provides that Ottawa will make certain contributions toward the costs of provincial health insurance plans, which conform to specific federally-established criteria. And since these contributions are in the range of fifty percent of program costs, the fiscal pressure created by the federal offer has been irresistible.

Over the years, both the form of payment and the conditions of payment have changed radically, with consequent profound effects on the administration of the provincial insurance systems. And there has been continued, and often bitter, debate over the meaning and content of the federal conditions for contributions, whether they were to be strict regulations or general principles to be interpreted by each province in light of its own conditions and preferences. Words like "comprehensive", or "universal access on equal terms and conditions" can mean very different things to different people, and can be interpreted broadly or narrowly. And the nature of the federal financial obligation, and particularly the process of its amendment, have provided ample scope for inter-governmental conflict and struggles for political and fiscal advantage.

But the general outline, of major but conditional federal support for provincial insurance programs varying in detail but conforming to a common pattern, has been maintained and, in the Canada Health Act of 1984, reaffirmed. (Some provisions of the act, however, are currently being challenged in court under the new constitution by certain medical associations, emphasizing the point that at present we do not know what our law is. We know what it was - prior to the Charter such a challenge could not have been mounted.)

The Canadian program is not truly a "health" system, because it is significantly less comprehensive than full insurance against all the costs of health care, let alone the costs of illness. The latter are both monetary and, perhaps predominantly, non-monetary, and it is difficult to conceive of a system which could in practice compensate for the non-monetary costs of pain, fear, and suffering. But even the quantifiable monetary costs of lost income, or modification of lifestyle - disability insurance broadly or narrowly conceived - are not part of the national system.

Health care itself takes a number of different forms, and is for operational purposes frequently defined by what is counted as health care. Table 1-1 presents the federal government's compilation of national health expenditures, by category, for 1982, along with their counterparts in the U.S. statistics. The two countries' definitions are coordinated by their respective statisticians, and are probably as comparable as any pair of countries is likely to be. These data sources also underly Figure 1-1.

Within this total, expenditures for hospital and medical care make up only about 55%. That does not, of course, define the full extent of public involvement in the funding of health care; as of 1981 all governments together covered just under 75% of total health costs (Canada, Health and Welfare Canada, 1984a). But the other expenditures flow through direct budgetary expenditures, as in the case of public health or research. Or they come from partial-coverage programs for

Table 1-1

National Health Expenditures per Capita, Total and Components, and Share of G.N.P., Canada and U.S., 1982

	Per Capita Expenditure		Percent of Expenditure		Percent of G.N.P.	
	Can. $	U.S. $	Can. %	U.S. %	Can. %	U.S. %
Total	1220.18	1337	100.00	100.00	8.44	10.50
Institutions	672.70	670	55.13	50.08	4.65	5.26
Hospitals	505.71	560	41.45	41.86	3.50	4.40
Nursing Homes	166.99	110	13.69	8.22	1.15	0.86
Professional services	266.20	366	21.82	27.42	1.84	2.88
Physicians	179.02	256	14.67	19.17	1.24	2.01
Dentists	68.24	81	5.59	6.05	0.47	0.64
Other	18.94	29	1.55	2.20	0.13	0.23
Drugs/Appliances	132.83	113	10.89	8.47	0.92	0.89
Rx Drugs	59.75	90	4.90	6.76	0.41	0.71
OTC Drugs	55.06	""	4.51	""	0.38	""
Eyeglasses	13.52	23	1.11	1.71	0.09	0.18
Other	4.49	""	0.37	""	0.01	""
Other Costs	148.45	187	12.17	14.03	1.03	1.48
Prepayment	17.90	56	1.47	4.16	0.12	0.44
Public Health	38.64	41	3.17	3.10	0.27	0.33
Construction	64.29	34	5.27	2.58	0.44	0.27
Research	13.26	24	1.09	1.83	0.09	0.19
Other	14.35	32	1.18	2.36	0.10	0.25

drugs or dentistry, set up by some of the provinces at their own initiative and expense, without federal oversight or contribution. Expenditures for long-term care blend into support programs for the elderly, chronically ill, and indigent; and welfare programs support some drug and appliance expenditure. Of this mixed bag, long-term institutional care for the elderly, outside hospitals, is the largest and fastest-growing component. But all these expenditure components are outside the "national health insurance" program.

The characteristically Canadian form of program finance is the one with which most citizens come in contact, and under which all are covered. It receives the most budgetary attention, and is the most externally visible; but in fact it covers only a bit more than half of health expenditures. Even if one allocated the major share of expenses for prepayment and capital construction to this head, which is probably correct, one is still left with about 60%. (Of course, as a proportion of government spending on health care, which tends to get an undue share of policy attention, "doctors and hospitals" are about three quarters of the total.) Expenditures on services of physicians, which are the focus of this paper, make up about 15% of health spending, in marked contrast with the U.S. where they reach nearly 20%.

Nevertheless, the reimbursement of physicians takes on political and administrative importance out of all proportion to its share of total expenditures. The role of the physician in directing other servicing patterns in the health care system is obvious. Furthermore, in a fee-for-service system physicians have control of their own work patterns and can influence their own "budgets" in a way impossible for salaried workers on an administratively determined budget.

In addition physicians collectively carry more political weight than any other group in health care. Their access to the headlines, and their degree of organization and commitment, assures that their concerns will remain at or near the top of the public policy agenda. They may not always win their points, but they can always ensure that they are debated, often to the exclusion of matters of health policy which may seem to others to be more substantial. Indeed, this overloading of the policy process, of the public debate and of the attention and energy of policy-makers, may be a significant cost of the process of fee control. When everyone spends so much time arguing about how, and how much, physicians should be paid, it is hard to find time to deal with broader issues. But the alternatives are not obvious.

Furthermore, although "hospitals and doctors" represent only about 55% - 60% of total spending on health care, they are the sectors in which Canadian and U.S. cost experience has most clearly diverged. Between 1971 and 1981, when as Figure 1-1 shows, the share of health spending in the Canadian GNP was relatively stable and the U.S. share was continuing to rise, the two per cent gap thus opened up was entirely concentrated in hospital and medical care expense. In 1971, Canada spent 4.65% of its GNP on hospitals and doctors, and the U.S. spent 4.34%. By 1981, the figures were 4.26% and 5.89%, for a net swing of 1.94%. All other components of health spending moved from 2.84% to 3.34% in Canada, and from 3.37% to 3.92% in the U.S., increases which were almost identical (Barer and Evans, 1985). It is clear that the policy and performance action has been in the "doctors and hospitals" sector, even if a good deal of the spending has been elsewhere.

The Legislative Framework

The Hospital Insurance and Diagnostic Services Act, passed by the federal government in 1957, was the first of the twin legislative pillars on which the Canadian health insurance system was built. It had a long history in federal and provincial politics, as Taylor (1978) documents, and several of the provinces had already established programs on their own initiative, starting with Saskatchewan in 1946. But the HIDS Act was the basis for a universal system, and laid down its most important features.

This Act provided that the federal government would make payments to any province establishing a hospital insurance program meeting federal standards, in an amount equal to 25% of the audited costs per capita of the shareable expenses of that plan, plus 25% of the national average of such shareable expenses, multiplied by the province's insured population. "Shareable" expenses were defined by the Act and regulations. But the critical point was that the process of implementation of public insurance was universal, across the population as a whole, with respect to the included services, rather than as on the U.S. pattern in the mid-1960s, extending coverage piece-meal to selected population groups.

Furthermore such coverage was complete, it did not supplement either private coverage or self-payment. There was no provision for a system of general co-insurance or deductible charges, although the Act did permit selected 'authorized' charges. Rather than reimbursing particular patients, as a partial-coverage system must inevitably do, the Canadian hospital insurance system reimbursed hospitals, on a prospective budget review basis (subject to end of year adjustments which, in the early years, amounted to cost reimbursement; those days are gone). The patient was no longer financially involved in the transaction. Hospital costs became a matter for negotiation between the hospitals and the provincial governments which reimbursed them from what was de facto general revenue drawn from taxation (although in the early years most provinces imposed compulsory, non-experience-rated "premiums", and some still do). Thus at a later stage, the attempts by provincial governments to control hospital costs have been fought out by direct negotiation between the parties concerned; the patient has not been involved as a "residual payer" when governments try to cut their spending.

The hospitals remained, as they had been before, "voluntary" not-for-profit organizations owned and run by boards of trustees, very similar to the U.S. model. Their owners might be hospital societies, municipalities, religious orders - as they still are. There are a few special-purpose institutions owned by the federal or provincial governments, such as military or mental hospitals respectively, but these have been a very small and declining part of the industry. There were also a handful of hospitals owned by for-profit organizations, but these were either company-owned facilities in remote, resource-based communities, or physician-owned hospitals; they were not set up to make a profit from hospital services per se. These shifted to not-for-profit relatively rapidly under the new reimbursement system. (This is not true, however, of the nursing home sector which was not under HIDS, although it draws heavily on public funds.)

Thus another important feature of the Canadian system was embodied in HIDS, not "socialized medicine", but "socialized insurance". The care delivery system was left in place, in its previous form, ownership, and control, but the fund-raising and reimbursement system was taken over by government. The short-run implications of this were primarily for the distribution of the economic burden of hospital care, rather than for the control of patterns and volumes of care themselves. The long-run implications for the locus of system control, of course, are quite different.

In particular, universal coverage permitted, and indeed virtually implied, reimbursement on a budgetary basis . Reimbursement on some sort of "unit-of-service" basis would have been possible, but transparently illogical for a single payer. This, in turn, not only had implications for the success of cost control in the hospital sector, but also significantly influenced the pattern and amount of physician reimbursement. Diagnostic services, such as laboratory testing and imaging, were concentrated in the hospital and reimbursed on a global budget. Their unit costs are in consequence far below the fees charged for such services in the U.S. where diagnostic services are profit centres for not-for-profit and for-profit institutions alike (e.g. Bailey, 1979; Conn, 1978).

Private, physician-owned labs and radiology facilities exist in a number of provinces; but the presence of the hospital sector as an alternative source of services, not fee-for-service reimbursed, has enabled provincial reimbursers to restrict the proliferation of such services by restricting the right to bill the provincial plan. New and expensive facilities such as the famous CT scanner are available only in hospitals, where the province has direct control over whether the facility will be funded. A private physician or clinic which purchased such equipment is not permitted to bill the province for its use. To date no private markets have developed, and are unlikely to since private insurance coverage for publicly available services is prohibited.

Similarly private labs must be individually licensed, in order to be able to bill for their services. The private physician may be allowed (provincial policies differ) to carry out and bill for a very restricted range of simple tests; but provincial policy toward the licensure of new private labs provides a powerful mechanism for restricting the expansion of such services.

In this way, the form of hospital reimbursement has enabled reimbursers to limit or block private physicians' access to those servicing activities which have the most potential for output expansion and profit generation. Rather than being paid for "supervising" others to provide complementary services, the physician must do the work in order to draw the reimbursement.

This principle applies more generally in the Canadian medical insurance plans. A reimbursable service of whatever type must be provided by a physician or other licensed practitioner approved to bill for that service; it cannot be provided by an auxiliary in the practitioner's employ. (Licensed diagnostic facilities are of course an exception.) The practitioner may be assisted, but the service as a whole cannot be delegated. While on the one hand this would appear to block efficiency-enhancing task delegation, on the other it severely restricts the expansion of billings on a given practitioner base. (And of course, there are other and more severe restrictions on task delegation in private, self-regulating fee-for-service practice (Evans, 1980), such that this provision is not a binding constraint - as the example of dentistry clearly shows.)

The consequences of these restrictions show up clearly in the data below. Universal coverage, when provided through sole-source funding, has created the administrative mechanisms through which cost control can be achieved, which is why it is less expensive than partial, multiple-source funding, in direct contradiction to the usual pseudo-market-based economic models.

The passage of the 1957 Act initiated a flow of funds to those provinces which already had a conforming plan in place, but most, including the biggest, Ontario and Quebec, took some time to get set up. Quebec was particularly distressed by the effective intrusion of federal initiative into an area of provincial jurisdiction. But by 1961, all provinces had joined the system, hospital coverage was universal, and attention focussed on physicians' services as the logical next step. (As in the U.S., most physicians are private practitioners who have admitting privileges at one or more hospitals, rather than being on salaried staff, thus hospital insurance left patients still responsible for physicians' charges for services in hospital as well as out.)

The public programs for reimbursement of physicians were closely modelled on the earlier hospital plans - which were viewed as an unambiguous success. In particular, the principles underlying the hospital plans were now expressed as the "Four Points " on which medical insurance was to be based - Universality, Comprehensiveness, Portability, and Non-Profit Administration. These were implicit in the hospital system, but emerged explicitly in the medical care case, because in fact there was considerable tension and debate as to whether public medical insurance should follow the hospital lead, or whether it should follow the U.S. lead.

Physicians and private, for-profit insurance companies lobbied very hard for a public system which would provide partial coverage for selected, disadvantaged groups in the population. Most of the population, particularly those who were not poor, elderly, or chronically ill, and therefore cheap to cover, would be preserved as the market for private industry. Moreover the economic independence of physicians, particularly with respect to fee setting, would also be preserved. In retrospect, observing the comparative economic outcomes for these two groups in Canada and the United States, it appears that they made a very clear and accurate assessment of where their interests lay.

But the broader public interest was also explored, and in retrospect also very accurately, by the Royal Commission on Health Services, the famous Hall Commission (Canada, 1964). Set up by a Progressive Conservative federal government, and chaired by a conservative judge, the Commission concluded that public programs which merely patched and supplemented a predominantly private insurance system could never meet the needs of those in the population most in need, and would, moreover, generate higher levels of total health care expenditures, than would a universal public system. They recommended extension of universal, comprehensive coverage to all ("medically necessary") physicians' services.

Physicians would continue as private, fee-for-service practitioners, as they do today, but they would be reimbursed according to a uniform schedule of fees negotiated periodically between the medical association of each province, and the provincial agency responsible for their payment. That agency, of course, would report to the provincial legislature through the Minister of Health, whether it was set up as an arm's-length commission or lodged in the Ministry of Health - in a Parliamentary system that is the normal process. But patients, as in the case of hospital services, would be removed from the financial aspects of the transaction. Fees and costs would be a matter for discussion between physicians and government.

The federal Medical Care Act of 1966 embodied these principles in its definition of conforming plans. For such plans, provinces were to be reimbursed 50 percent of the national per capita costs of "medically necessary" care, multiplied by the covered provincial population. The Act came into effect on July 1, 1968, and once again certain provinces had plans already in place and began to draw payments; others required time to get themselves organized. But by January 1, 1971, residents of all provinces had public medical insurance covering them for the costs of all "medically necessary" (excluding optional cosmetic surgery, administrative examinations, and some other minor categories) services provided by physicians, in or out of hospitals. Despite a great deal of debate, and legislative changes with major effects on governments and to a lesser extent on providers of care, the system then established is the one still in place. From the patient's point of view there have been few significant changes.

Conflicts of Interest: Governments and Physicians

For most of the subsequent period, however, there have been continuing conflicts between the federal and the provincial governments over the distribution of the burden of paying for this system. Both sides recognize that the system in totality is much less costly than a mixed public-private system would have been, and that it is overwhelmingly popular politically, but it is still advantageous to get the other fellow to pay a larger share. At the same time, conflicts have been more or less continuous between the provincial governments and physicians, over the level and to a lesser extent the structure of fee schedules. Only recently, in the 1980s, have physician associations had reason to take a major interest in the activities of the federal government, as the impact of the federal-provincial relationships on the context and outcome of the provincial-medical association negotiations has become increasingly obvious.

Initially, the provincial medical insurance programs set up in the late 1960s and early 1970s followed very closely the model of their predecessors, the not-for-profit, physician-sponsored programs in each province which were affiliated in Trans Canada Medical Plans. (These had offered comprehensive, first-dollar community-rated coverage, although pressure from the commercial insurers was forcing them to back away from this approach, just as the Blue plans in the U.S. were forced to become more like the commercials. This development was in Canada one of the major arguments for the public system.) In some cases they simply integrated the records and the personnel of these plans into the provincial agency. But the process of fee determination was significantly changed.

Under the physician-sponsored plans, the general principle was that physician associations determined internally both the level and the structure of their own fee schedules. The schedule was a document issued by the provincial association, as a "guide" to all its members, in some provinces it was called a schedule of minimum fees. It had no binding force on practitioners, but was used for reimbursement purposes by the physician-sponsored insurers, and was generally accepted by associated physicians. In some provinces, the insurance plan had some input to the setting of the schedule, but the final decision was with the physicians. Occasionally the resulting outlays exceeded the resources of the plans, and a pro rata cut in reimbursement was negotiated ex post, but premiums would subsequently be raised.

Not too surprisingly, physicians' fees escalated steadily during the pre-Medicare period. From 1951 to 1971, physicians' fees as defined by the fee schedules rose 26.6% relative to the general Consumer Price Index, while the combined effects of increased collections ratios, actual charges moving up towards the schedules, and de facto fee increases through changes in schedule structure added an even larger amount, probably 30% or more (Barer and Evans, 1983).

When the provincial governments took over the reimbursement process, however, the balance of negotiating power was shifted. Whereas previously the physician-controlled insurance programs had essentially administered an orderly escalation of fees and incomes, under the new regime provincial governments had to bear the political costs of raising the necessary funds. The negotiations became serious.

Foreseeing this, physicians' associations had urged from the outset that the provincial plans be "kept out of politics" by placing them under the administration of public commissions rather than directly within the provincial ministries of health. The hope was that this would increase the influence of physicians over the plans' administration, and particularly dilute the governmental interest in cost control. Initially this pattern was accepted in many of the provinces; but the obvious need for accountability in the spending of such a large proportion of public budgets has meant that the negotiating process has always been de facto between the provincial governments and the medical associations. Some provinces have folded the administration back into the provincial ministries, while others have maintained the commission form.

But the process is the same. Each side, government and profession, appoints a negotiating team, and the teams meet to hammer out an agreement which must be ratified by their principals - the provincial Cabinet and the members of the professional Association. The negotiations have become progressively 'professionalized' as particular civil servants have become specialized negotiators, and recently some Associations have employed professional negotiators.

The general form of the fee schedule negotiations was carried over from the earlier not-for-profit plans - the medical associations determine the structure of the fee schedules and the bargaining is over the percentage increase in the whole structure. One could think of the bargaining as over the conversion factor to apply in translating Relative Value Units into dollars, from a Relative Value Scale set independently by the profession. At each negotiating session (now usually annual in each province) the pattern of utilization of services or number of items billed in each fee schedule category in the previous period is adjusted upward to allow for the estimated effects of increases in population and in per capita utilization rates (the latter correlating closely with increases in numbers of practitioners). This is used as a base to estimate what the total expenditures/receipts would be under the new schedule. Provincial government and profession then struggle over the percentage increase in this global amount, with the outcome of their negotiation expressed as an average percentage increase in the whole schedule.

In consequence, the negotiations are always implicitly, and usually explicitly, about incomes. Since the physician stock in any province for the period subsequent to negotiations can be projected quite accurately, and the ratio of gross to net incomes is stable over short periods of time, the determination of projected gross outlays by the provincial government is simultaneously determination of the gross receipts of the physician community, and thus average gross receipts per physician and, more or less, average net incomes (before tax). There are some other sources of physician professional income other than the provincial plans, but they are usually estimated at about 10 percent of the total.

While there are, from time to time, discussions of the adequacy of the internal structure of the fee schedules as Relative Value Scales, and while for political reasons or as part of negotiating strategy physicians or government may occasionally focus on the absolute level of reimbursement for a particular item, it is clear to all concerned that the real issues are, for physicians, net incomes, and for governments, global outlays. Indeed discussions in the news media commonly refer to the bargaining as taking place over physicians' "salaries", which is quite inaccurate in a fee-for-service system, but does express the underlying reality that it is average income levels, not the level of reimbursement for particular items, that is at stake.

Accordingly, negotiations tend to focus on trends in physicians' incomes (as reflected more or less inaccurately in various different data sources) and their relationship to other professions or to the general public. Allegations of increases in overhead costs are frequently brought forward as justifications for increases in fees. If the real value of fees were to fall with general inflation, but the net incomes of physicians did not, such inflation would also be offered as an argument for an increase in fees, at least in public discussion, but would usually receive much less attention from the other side. Increases in general price levels are important data; but as far as an outsider can tell, these enter the discussions through their effect on the buying power of physicians' incomes, not through their reduction in the real value of fees *per se*.

Thus there has not been a great deal of attention given to the detailed analysis of the time and effort content of particular procedures. Revisions to the internal weights of the schedule are politically difficult and dangerous for the profession, as they tend to undermine and fragment the united front. And provincial governments have neither the interest nor the expertise to take on the political risks of a struggle with physicians over the internal structure of the schedule.

To this general picture of negotiation over the implicit Relative Value Units, there are, however, several important qualifications. First, there is the question of "fee creep", or the process of increase in total provincial outlays and average physician incomes, independent of increases in particular fees - a process which is, after all, the major focus of this monograph. Secondly, provincial governments or medical associations have, from time to time, objectives in the negotiations which are only partly related to the overall level of expenditure, but which involve shifts in the internal relative value structure. And finally there is the very important and politically difficult question of what happens, or should happen, when agreement is not reached. This issue has been a problem since the beginning of the public plans, and quite probably will remain so indefinitely.

The "fee creep" problem arises in several ways. It is most clear-cut when new procedures are developed in medical practice, and the schedule has to be expanded to accommodate them. Such procedures frequently begin as difficult and technically demanding, within the competence of a very few physicians. They may appropriately carry a high fee to reflect their difficulty and special requirements. Furthermore, while the procedure is uncommon, its fee has little impact on overall outlays. But as the procedure becomes better understood and more routinized, and a wider circle of practitioners become more comfortable with it - and more indications for its application are identified - the costs expand rapidly. At the same time, its practitioners and the profession generally will resist bitterly any attempts to revise the fee downward to reflect the less demanding nature of the procedure. Items associated with diagnostic ultrasound procedures are a case in point, at least in B.C.

Physicians can thus increase their average incomes, and overall plan outlays, faster than the reported increases in fee schedules, when new procedures are introduced and then proliferate rapidly. Because of the lag in fee adjustment, new procedures tend to be overpaid. This effect also goes some way toward explaining the concern expressed by physicians at the restrictions imposed on the acquisition of technology in hospitals by the public hospital reimbursement plans. Since many forms of diagnostic and therapeutic facilities are reimbursed only in the hospital, not when provided in private medical practice, the level of spending on new technology and facilities in hospitals influences the degree of possible "fee creep" in private medical practice.

An important adjunct to formal bargaining over fees is then the process of applying pressure to 'release' new technologies for use in office practice. Again, diagnostic ultrasound in B.C. has followed this pattern. Until very recently, only public hospitals housed the necessary equipment. Over the last two or three years, three private radiology practices have begun to provide diagnostic ultrasound, and there is continuing pressure (based, apparently, on the necessity of this range of procedures to the comprehensiveness of the diagnostic arsenal) for more.

Fees for new procedures thus become subjects for special negotiation, both when they are introduced and as they proliferate. In addition, however, there are a number of procedures which are relatively discretionary, and which can under particular circumstances be provided at little cost to the practitioner. The extra patient seen during a house call, the appendectomy performed incidental to some other abdominal operation, simple diagnostic and therapeutic procedures performed incidental to an office visit, - all the "while you're (or I'm) here" services - impose little extra time or effort cost on the practitioner relative to their reimbursement and are subject to substantial expansion at the practitioner's discretion - within the norms of acceptable medical practice.

Such procedures lead to a shift in the utilization patterns across different fee schedule items, and become subject to specific negotiation as to either the allowable fee, or the circumstances under which the fee can be charged. A common response by the reimburser will be to specify that when two such linked items are billed simultaneously, the fee for one is sharply reduced. Thus the fee schedules, as their preambles declare, cannot be interpreted solely as a set of procedural prices or a sort of catalogue. The negotiated rules governing the reimbursements for particular procedures are an integral part of the schedule. Furthermore, since from the perspective of either total plan outlays or average physician incomes, rules governing reimbursement can have the same quantitative effects as changes in the fees themselves, both sides recognize that such rules can be traded off in negotiations against overt increases in fees.

In addition to the problem of the discretionary procedure for which, in the economic jargon, the marginal reimbursement exceeds the marginal cost (to the practitioner in each case), there are procedures for which pure labelling decisions by the practitioner can affect reimbursement levels. Quebec provides perhaps the clearest example of this phenomenon (see Chapter 4 below) in the form of the rapid increase in the proportion of examinations billed as "complete" and "complete major" rather than "ordinary" during the early 1970s. Fees were unchanged during 1971 to 1975, but average reimbursement per examination went up sharply. It is not possible to tell whether the content of examinations changed, or only the labels. Also problematic are such things as periodic health exams, and out-of-hours calls. The former are in most provinces restricted as to the frequency with which they will be reimbursed, but physician and patient may be able to find a symptom to justify a bill. And a physician can exercise some control over patient scheduling in order to shift a service to out-of-regular-hours.

It is not to be taken that all physicians engage in such "creative billing" all the time, but a certain amount of such slippage exists, and can be taken advantage of when pressure on list fees becomes intense. The general response to such slippage has been an effort by provincial governments to negotiate or impose particular rules governing the reimbursement of particular fee items where such slippage is most apparent.

In addition, the provincial governments have from time to time certain objectives of their own which may be furthered by attention to specific fee items. Maintenance of the relative income status of general practitioners has been one such declared objective, either because GPs are perceived to practice a less intensive and expensive style of medicine, or because they may be better able to respond to the needs of patients. Some provinces therefore build into their fee schedules specific disincentives for patients to self-refer to specialists, or for specialists to accept such patients. The specialist is paid only a GP visit rate, not the much larger consultation rate, for such patients, and is allowed to collect an additional charge (which still does not make up the difference) from the patient. Similarly, "surgical assistance" payments to GPs have been interpreted as intended to encourage the GP to give up the surgical role to specialists - in the interests of quality of care - but to maintain continuity of care.

The 1976/77 Quebec accords (see Chapter 4 below) were described by Boutin (1979, p.2) as embodying selective increases intended to promote several government objectives - to favour ambulatory over hospital care, to encourage the growth of home care, and to halt the trend towards more costly examinations. The other provinces have similar general objectives, although they may not be able to pursue them as openly. In general, these reflect some mix of attempts at direct or indirect cost control, as well as a rough sense of desirable (or undesirable) trends in medical practice.

Historically, then, governments have dealt with the problems of "fee creep" and specific objectives by trying to negotiate a combination of selective increases or decreases in particular fees, and of more or less *ad hoc* rules governing the reimbursement of problematic items. They have also tended to avoid allowing for fine distinctions in the fee schedule, such that problems of monitoring would make control impossible. An office visit is an office visit, and the reimbursement rate is not sensitive to its content, because that content would be very difficult for a reimburser to check. The result is a reimbursement system that encourages quick and frequent visits, and penalizes practitioners who choose not to practice in this way. The implications for quality and efficacy of care are, of course, unknown.

But the monitoring of such complex sets of rules is quite difficult, particularly when there is disagreement between practitioners and reimbursers over the interpretation of rules after the agreement has been settled. There is no available umpire. The present trend, therefore, starting in Quebec in 1971, and flirted with in B.C. at various times (including the 1985 agreements), is to build utilization experience directly into future fee-setting through multi-period agreements. An agreement may embody ceiling levels of average physician gross receipts, or of increases in per capita utilization, and if these are exceeded, next year's fee increases are automatically scaled down. Physicians are made collectively responsible for utilization control, and the "high roller" penalizes his/her colleagues.

But fee levels are negotiable in any case, and multi-year agreements are usually reopenable. So the force of this approach is primarily to bring utilization trends directly into the bargaining process, and to make more explicit its focus on incomes, rather than particular prices. Quebec's use of this "capping" mechanism may in one sense "explain" its remarkable success in holding down overall costs; but the political will and negotiating skill must still be such as to convert the past utilization trends into future fee increases. The process is not automatic, whatever the agreement may say.

This immediately raises the question which has lain behind all of the above discussion. What happens if agreement is not reached? In the old days of physician-sponsored insurance plans, medical associations simply promulgated their new schedules, and insurers found the money to pay them. (As noted, fees paid might be scaled down pro rata if the insurer ran out of money, but it was then the plan's responsibility to raise premiums.) In the public regimes, physicians complain that the situation is reversed. Provincial governments can if they choose simply impose schedules, and no true negotiation takes place.

There is clearly some truth to this claim, although the negotiating process is intensely political and is often played out, especially in case of conflict, before the general public as well as provincial treasury boards and medical association members. Individual physicians have direct access both to patients, and to individual members of provincial parliaments, so have powerful lobbying channels to get their message across. "Image" advertising by medical associations is becoming increasingly common, which can hardly be countered by "negative image" responses! And the climax of bargaining is often accompanied by what the British call "shroud-waving" - if physicians' incomes are unsatisfactory, the quality of care will fall for reasons not fully spelled out. Threats of collective "job action", and "study sessions" by physicians have accompanied some negotiations, though actual strikes are rare and politically dangerous. (The provincial legislature can simply order physicians back to work, as if they were a recalcitrant trade union, although it will only do so if sure of general popular support.) Medical associations have a single objective; their opponents have a more complex problem.

But in the end the provincial government can determine what fees it will pay, on a "take it or leave it" basis. What happens if physicians decide to leave it? The answer is found in the rules on "opting out", or other forms of non-participation, which vary significantly from province to province.

Opting Out and Extra-Billing: A Residual Quasi-Private Sector

In general, physicians may choose to opt out of the provincial plans, and bill their patients directly. They must notify the plans as to the specific services provided, however, so that the patient may seek reimbursement. This payment will be to the patient, so that the problem of collections is left with the physician. But in Quebec, at one end of the spectrum, the opting-out physician must not charge the patient anything more than the schedule of fees which the Regie de l'Assurance-Maladie du Quebec pays to opted-in physicians. If the physician wishes to bill above this rate, neither physician nor patient will be reimbursed by RAMQ. Not surprisingly, physician participation is virtually universal. Non-participation is restricted to a handful of physicians caring for very wealthy patients and/or providing largely uninsured services.

At the other end of the spectrum, the province of Alberta permits physicians to extra- or double-bill freely, charging the approved schedule rate to the provincial agency, and then charging an additional fee in any desired amount to the patient. (Under severe political pressure, the Alberta College of Physicians, which is the statutory licensing body, has passed a regulation making the extra-billing of welfare patients unethical practice. But such extra-billing continues on a large scale - the regulation is simply not enforced - raising interesting questions about self-government and the legal position of the profession.) Again not surprisingly, extra-billing in Alberta is quite widespread, practiced by about half of the physician population, particularly in areas of high physician density (Plain, 1984). But opting out is not common, as it has no economic advantage.

In between one finds Ontario, where opted-in physicians may not extra-bill, but opted-out may. There are selective impediments to opting out - in particular a physician must opt out with respect to all patients. It is not permissible to opt in for the low income patients and selectively opt out and extra-bill the high income ones. (But there is an exception to this for teaching hospital physicians - many of whom opt out.)

From the beginning of the program there has been a significant proportion of Ontario physicians opted out - about 12% - some for ideological reasons and some for straight-forward economic. (For a detailed analysis, see Wolfson and Tuohy, 1980). But the rate has tended to fluctuate, particularly during the late 1970s and early 1980s, serving as a "safety valve" (in physicians' eyes) to protect against tight fee bargaining by provincial governments. The overall rate never seems to have exceeded 20%, and has fallen from its late 1970s levels (and of course the overall physician supply continues to rise rapidly). But opting out is more often a collective rather than an individual decision for quite obvious economic reasons, and tends to be concentrated in particular geographic areas, specialties, or hospitals.

In the rest of the country, opting out has been a very small-scale phenomenon (in British Columbia, non-existent). Across the country as a whole, its quantitative significance is reported by both governments and the profession to be very small - perhaps 5% at most of total expenditures for insurable physicians' services being charged to patients.

The proportion of total physician expenditures paid out-of-pocket is somewhat higher than this, because not all services are covered. "Medically unnecessary" services such as insurance examinations or other certification procedures, and cosmetic surgery at the patient's option, such as nose-bobbing, breast-building, or ear-flattening, have always been excluded. In addition, there is in some provinces provision in the fee schedule for the patient to pay a portion of specialists' fees if not referred by a general practitioner.

Responses to Inflation and Restraint: Attempts to Tap New Revenues

In the first years of the programs, the issues of opting out and physicians' reactions to the results of the fee-setting process were not major policy issues. The introduction of the public plans had capped a long period of income gains under private insurance, and physicians were "fat". In 1971, average net incomes of Canadian physicians (after expenses, before taxes) reached 5.75 times the average industrial wage (weekly estimate from the labour force survey, annualized), up from about four times in the early 1950s, and 4.35 in 1961 (Evans, 1984, ch. 7). Despite opposition to the public plans which was both ideological and rooted in unease about the future, physician militance was muffled by money. And a rapidly expanding economy could afford the cost without much pain.

But in the early 1970s, a combination of restraint on fee schedule increases and more rapid than expected inflation dropped physician fees in real purchasing power terms farther and faster than in any previously recorded period - including the war and the depression - and relative incomes began to slip. The extent of that slip is questionable, given certain weaknesses which began to develop at the same time in the income data based on taxation records (Evans, 1984, Data Appendix; see also Barer and Evans, 1985), but the fact of a large drop in the ratio of average physician incomes to those of the general population, between 1971 and 1976, is unchallenged.

This shift by itself would have encouraged increased militancy and interest in opting out, although it must be recalled that a universal program makes that decision much more difficult. When physicians draw all their livelihood from a public plan, they risk much more from loss of patients by moving to direct billing. In a collection of partial plans as in the U.S., most physicians have a great deal more independence vis-a-vis individual payers. But there were also two major moves by the federal government in the mid-1970s which affected the general climate and the incentives facing physicians, and together both delayed and exacerbated the physician response.

The first measure was general to the whole economy, the federal anti-inflation program which imposed a price and wage freeze as of October 15, 1975. This was in place until 1978, and is generally evaluated as having had a significant, although not overwhelming, moderating effect on overall rates of inflation. But its effects were particularly marked in the public sector, as well as the quasi-public education and health care sectors. Physicians in particular found that, just as they were becoming collectively aware of how hard their fees and incomes had been hit since 1971, and were mobilizing to do something about it, the federal government had closed off their chance to catch up. The limitation was not complete, as the question of what constituted a "productivity increase" in fee-for-service medicine, which would be grounds for an income increase, was vague enough to provide ample room for disagreement. But large-scale opting out in hopes of raising fees would have been an open invitation for federal intervention. "Catch-up" had to be delayed.

The second major change was in the federal programs themselves. The federal government had expressed concern, since the late 1960s but increasingly through the early 1970s, about the open-ended nature of its commitments under the cost-sharing plans. There was much talk of provinces being careless with the spending of "50-cent dollars" - which of course was not true at the margin for any one province, but was true in aggregate - and about the distorting effects of the program on provincial priorities. After much negotiation, and not with total provincial agreement, the federal government introduced the Federal-Provincial Fiscal Arrangements and Established Programs Financing Act, (EPF) effective April 1, 1977.

The provisions of this Act, and its various compensating formulae and interaction with other aspects of federal-provincial finance, are both arcane, and fascinating to a limited circle. But its fundamental thrust was to shift the basis of federal contributions from actual provincial expenditures on health care, to the growth (or decline!) of provincial incomes. Federal transfers were split into two parts, of roughly equal magnitude (at least initially). One was a cash contribution related to provincial population and per capita gross provincial product (three year moving average), and the other was a vacation of "tax room", the assignment of an additional share of the personal income tax collected in each province (equalized, as always, across provinces, to allow for different tax capacities) to the revenues of that province.

The net result was not only to place provinces at risk for all of health expenditures at the margin, but also to transfer to them more of the revenue risk of general economic fluctuations. (The implications of this latter shift have tended subsequently to become tangled up with more specific discussions over health care expenditures.)

What was emphasized at the time of this shift from cost-sharing to block funding, was the incentives which it gave for provinces to manage their health care spending more effectively. In fact, however, the cost experience of the early 1970s showed that provinces had been very effective in controlling overall costs under the old regime, although perhaps more so in the case of physicians' services than in hospitals. (For the detailed expenditure data, see Barer and Evans, 1985; for the institutional history, see Taylor, 1985.)

What seems to have been less clearly perceived, however, was that the new system would create incentives for provinces to begin moving costs back to the shoulders of patients, either directly or by default

(Brown, 1980). Under the cost-sharing system, a province which imposed user charges at point-of-service, as B.C. for example did in hospitals, was not reimbursed by the federal government for a share of the costs thus funded. But under EPF, any money raised this way went directly to reduce the province's liability. Similarly, it was an open temptation to a province to be relatively relaxed toward extra-billing in the hope that this would divert the most militant (or greedy) members of the medical profession and enable the escalation of fee schedules to be moderated.

(It should be emphasized, however, that the debate over direct charges to patients in the Canadian context, quite unlike that in the U.S., is virtually entirely over distributional issues. Provinces which favour them see them as a way of shifting costs from public budgets to private. Physicians and their associations are quite explicit in advocating them as a way of raising prices and costs, in a system which they claim to be underfunded. No one, with the possible exception of a handful of economists and business writers, whose grasp of sophomore-level economic theory is stronger than their familiarity with the health care system, takes direct charges seriously as a way of reducing costs (Barer, Evans, and Stoddart, 1979)).

The combination of deferred pressure for catch-up in physician incomes, plus a significant shift in the financial incentives faced by provinces, was that the issue of direct charges, physician opting-out, and extra-billing, began to grow in importance in the late 1970s and early 1980s. The opted-out rate among Ontario and Alberta physicians began to rise in 1977 and 1978. And, as documented in Chapters 2 and 3 below, fee settlements began to rise. Far from "buying off" physicians, extra-billing provides a lever whereby they can negotiate still larger increases in benefit schedules. Particularly in the ideologically most conservative province, Alberta, the provincial government seemed to be promoting the modification of the public system more along U.S. lines.

At the beginning of the 1980s, the "defense of Medicare" against physician associations, some provincial governments, and (when anyone asked them) the private insurers, was becoming a major political issue. Justice Hall, who had chaired the Royal Commission twenty years before, was commissioned to write an evaluative report (Hall, 1980) which strongly condemned extra-billing and direct charges for their harmful effects on equality of access, but offered a solution to the problem of fee determination - compulsory arbitration - which was rejected by both physician associations and provincial governments. An all-party committee of the federal House of Commons held hearings across the country and in its report (Canada, House of Commons, 1981) conclusively rejected both the argument that the system as a whole was underfunded, and the physicians' plea for open extra billing. A majority of the committee (with a dissenting minority) recommended that extra-billing be permitted only on the terms allowed in Quebec - effectively not at all.

Finally in late 1983 an unpopular and failing federal Liberal government made Medicare and extra-billing a major part of its bid for re-election. It introduced the Canada Health Act, superceding and consolidating both the Medical Care Act and the Hospital Insurance and Diagnostic Services Act, which provided for a tightening up of federal standards of oversight over provincial plans. In particular, provinces which either imposed, or permitted physicians to impose, direct charges on patients, would lose federal grants dollar for dollar in proportion to such charges. The hope was to trap the Progressive Conservative opposition into being "against Medicare" - political suicide. But the bait was not taken. After much committee work and behind-the-scenes lobbying, the bill was passed unanimously in April of 1984 - to the chagrin of the physician supporters of the PCs.

In response to this bill, three provinces (Saskatchewan, Manitoba, and Nova Scotia) have taken steps to eliminate opting out and extra-billing entirely. Ontario's Conservative provincial government said that it would not do so, but was replaced by a Liberal minority government in May of 1985, (supported by the left-wing New Democratic Party), which is pledged to eliminate the practice. In July 1985, the Canadian Medical Association launched a suit challenging the Act as unconstitutional. As emphasized above, the confusion in Canadian law created by the new constitution and the Charter of Rights is presently such that the outcome seems quite unpredictable.

If the challenge fails, it appears that Alberta will be left alone, permitting widespread extra-billing for ideological reasons, and suffering a corresponding reduction in its receipts from the federal government, at least for the life of its present Conservative government. (But it is not the only provincial government to accept reduced revenues for the sake of ideological principle. The B.C. government has since the beginning of its hospital insurance plan required acute-care patients to pay a "user fee", which prior to EPF was a purely symbolic "dollar-a-day" charge of no economic significance and obscure motivation. But since the mid-1970s, this charge has escalated until in August, 1985 it was $8.50, and is still being collected even though the Canada Health Act provides that the grant from the federal government to the province must be reduced by an amount equal to collections from this charge. Provincial patients are subsidizing the federal government, to protect an ideological principle of the provincial government to which, according to opinion polls, most provincial residents do not subscribe.)

If the challenge succeeds, on the other hand, extra-billing will not be constitutionally entrenched as a result. It will remain in the power of provinces to encourage, discourage, or suppress it; the challenge is over the federal government's authority to try to influence provincial policy. (Although when judges without political responsibility are turned loose to make substantive law according to their own biases, even that prediction is uncertain!) Presumably the new Ontario government will follow through on its declared intention, in which case Alberta will still be the odd province out - unless some of the provinces which have eliminated extra-billing in the last year should decide, once the financial incentive is gone, to change back.

But the suppression of extra-billing, or even the discouragement of its expansion, leaves open the question of how failures to reach agreement over fee schedules will be resolved. Hall (1980), acting as Special Commissioner for the federal government to examine the health insurance system, recommended some form of compulsory arbitration. This was strongly rejected by both provincial governments and physicians' associations. The former fear the generosity of arbitrators who are not responsible for raising the funds required by their awards, as well as pointing to the difficulty of reconciling this procedure with the ultimate constitutional principle of parliamentary accountability for expenditure. The latter appear to feel that they are ethically entitled to set their own fees and incomes, and to recover any difference between their objectives and governments' willingness to pay from the patient. Abandoning this principle is alleged to make them "civil servants" and there is even more heated rhetoric about "civil conscription".

The new Canada Health Act adds another complexity. It imposes as a requirement for federal contributions that provincial plans embody some equitable process for resolving disagreement, giving compulsory arbitration as an example, but does not require compulsory arbitration. But no one knows what other alternatives would be legally acceptable - that would presumably involve the courts. A natural compromise would be for provincial governments to require physicians to give up the right to extra-bill, at least within the plan (physicians could always extra-bill on the Quebec model, with no reimbursement for either physician or patient), but to offer compulsory arbitration in return. Despite their ideological opposition, physicians might well accept. (Manitoba has already done this.) But the cost implications of such a change, over the long term, are difficult to calculate. In any case, this is one provision of the federal Act which is particularly bitterly criticized by provincial representatives, and which might be modified if it becomes a loophole for cost escalation. Clearly the underlying problem of competing legitimacy has not yet been put to rest.

"The Canadian System" - A Moving Target

This extended discussion of the recent history of the public insurance programs is intended to emphasize the conditionality of any description of "The Canadian System" at any point in time, and *a fortiori* over an extended period of time. It is roughly, but not strictly, true, that all Canadians have access to all needed medical services without charge at point of service. It is not true in some parts of Ontario, for some services, and it is not true in much of Alberta; but it may become true, in the future, in Ontario. It is true almost everywhere else. Similarly, the fee data presented in subsequent chapters refer only to physicians' rates of payment and receipts from provincial insurance plans, although the total expenditure on physicians' services data also use taxation statistics and so should include extra-billing. The effects of this slippage are quantitatively very small, except perhaps in Alberta, but they are of great political importance.

In particular, the feasibility of using fee control to limit the growth of expenditures on physicians' services may depend critically on the extent of legal and administrative "safety valves" (from the physicians' point of view), or possibilities for "end runs" (from the reimbursers' point of view). When fee negotiations bear too tightly on physicians' incomes, what scope is there for them to transfer some of the costs directly onto patients? If little or none, as in Quebec, fee bargaining can be quite aggressive - as we shall see below it has been in Quebec. Where physicians have ample scope to charge governments and patients simultaneously, fee control is politically more difficult. But Quebec is different in many ways in addition to its regulations on extra-billing, and as in any unique situation, any assignment of causality is open to debate. (Provincial governments with relatively relaxed attitudes toward extra-billing have historically been relatively conservative, with strong support from physicians, and have not always bargained as aggressively over fees.)

As backdrop to the political manoeuvrings between federal and provincial governments, and between provinces and medical associations, however, there are several broader trends whose effects are probably more important in the long run than in the short. First and most prominent for the purposes of this paper, is Canadian national (non)-policy toward health manpower (Lomas et al., 1985), second is the general trend in the demographic structure of the Canadian population, and third is the middle-run outlook for the Canadian economy and particularly for governments.

The first, as will be reflected in the data in subsequent chapters, has led to a steady expansion in the supply of physicians per capita which, while slowed by the virtual choking-off of immigration of physicians after 1975, continues at a steady pace. It is projected to continue for the indefinite future, unless quite drastic restrictions are applied to access to medical training. There is no internal mechanism within the educational system which will slow the inflow.

The implications of this expansion for expenditure control are profound. There is as yet no sign of "saturation" in the supply of physicians' services - new physicians are absorbed into the system and average workloads are maintained. But limitation of expenditure growth (per capita) when manpower continues to rise can only be achieved if average physician incomes actually fall, which requires not only that fee escalation be contained, but that fees fall, at least in real purchasing power terms. This is likely to be extraordinarily difficult, politically, especially in times of low inflation when one cannot rely upon automatic erosion of the real value of fees.

Furthermore, the "ratchet effect" in income expectations implies that physicians' efforts to maintain incomes against erosion, by both collective action on fees and individual action to increase billings, are likely to be increased in the future. Thus current manpower "policy" obstructs efforts to limit expenditure, both directly and by making fee control more difficult.[1]

The progressive increase in the average age of the Canadian population, a trend shared with many other countries, is frequently adduced both as an explanation for past upward pressures on costs, and/or an argument for future increases. But the quantitative basis for this argument is far weaker than its political impact. Physicians' services per capita are much less sensitive to age structure than are institutional services. Furthermore, at least with respect to physicians' services, there is no supporting evidence in Canada for an argument that overall service supply responds significantly one way or another to fee and income levels. The argument that the population is aging, therefore we should be spending more on health care, therefore physicians' fees and incomes should be increased, either by schedule increases or by permission of extra-billing, is a breath-taking series of gaping non-sequiturs - but has been tried. In this policy debate, at least, the aging issue seems to be a politically potent red herring.

Finally, and of critical importance, is the continued slow growth of the Canadian economy and the budgetary pressures on governments. The perception that costs are "exploding" appears to be based, not so much on absolute cost increases as on their relation to other budgetary pressures. When the economy is in decline, or stagnating, any cost expansion is a political and a financing problem - in good times rapid expenditure growth, however wasteful, looks benign. Thus a Canadian system which is a remarkable Best Buy relative to the U.S. or indeed that of most European countries, looks expensive to the provincial governments, faced with large deficits, which must finance it.

In this situation of biased perceptions and partial incentives, it is always tempting to try to shift costs rather than to control or bear them, even if the result might be an increase in overall costs for no detectable gain (except to providers). The urge to shift, to move costs back to patients or private insurers, is exacerbated if cost management and control is perceived to be ineffective. Again, arguments are raised in Canada that governments simply "cannot afford" to bear the costs of health care, and that additional funding sources are necessary if costs are to be raised to an appropriate level. These arguments come exclusively from providers, of course, and the general public is hostile to the idea by a large majority. But what governments will do depends (at least partially) on what they believe to be feasible. Hence the importance of a clear picture of what has, and has not, proven to be feasible in the control of physician fees and costs in the context of the Canadian health insurance systems - which in chapters 2 to 6 we shall try to provide.

FOOTNOTES - CHAPTER I

[1] It is perhaps ironic that the usual predictions about the effects of fee control drawn from economic analysis, that lowering fees leads to reduced service output, "shortages", and queuing, should be the exact reverse of the real situation. But then, economic theory does not in fact support such unambiguous predictions; it can only be derived by supplementing theoretical models of transactor behaviour by assumptions from outside the analysis itself. Such supplementary assumptions are common and convenient, but no less arbitrary for that, and do not rest on any consistent empirical support.

Chapter 1 Data Sources

Figure I is drawn using Canadian data from Table 1 of Canada, Health and Welfare Canada, (1984a), for 1960 onward, and Leacy (ed.) (1983), Series B513 and F13 for earlier years. U.S. data are from Gibson, Levit, Lazenby, and Waldo (1984) for 1965 to 1982, and for earlier years from Cooper *et al.* (1973). Table 1-1 reports 1982 data from the same (1984) sources.

Chapter 2

Accounting for Expenditure on Physicians' Services - Canada

As described in the previous chapter, the federal Medical Care Act of 1966 provided that as of July first, 1968, the federal government would make financial contributions (of roughly fifty percent of approved or shareable costs) to provincial medical care insurance programs meeting certain federal standards. Section 9 of that Act specified that the Minister of National Health and Welfare would make an Annual Report to Parliament respecting the operations of the Act.

The first such report (Canada, Department of National Health and Welfare, annual) was issued for the fiscal year ending March 31st. 1969, and detailed federal contributions to the two provinces, Saskatchewan and British Columbia, which had qualifying programs in place on July first, 1968. In addition, it reported the estimated and actual total and per capita costs of insured services in each province, which were the bases for the determination of federal interim and final contributions.

The remaining provinces established programs at various times over the next two and a half years; and by January first, 1971, all were included. The Annual Report for fiscal year 1972/3 is thus the first to contain data on program costs for, and federal contributions to, all provinces. These expenditure data for the early years of the program were not, however, consistent either across years or from province to province. In particular, the difference between the formulae for federal cost-sharing in the medical and the hospital insurance programs implied that it was more advantageous for certain provinces to reclassify the costs of laboratory and radiology services provided by hospitals to ambulatory patients from the medical to the hospital insurance program. But by the 1974/5 Report, annualized and adjusted per capita costs of insured services were reported for each province and each year of program participation.

In the 1975/6 Annual Report, these adjusted estimates of per capita costs of insured services were revised for the period 1972/3 to 1974/5. In addition an estimate was published, for the first time, of the components of overall expenditure increases from 1971/2 to 1975/6. Fee payments to physicians made up 93.8% of all public medical insurance payments in 1971/2 and 93.6% in 1975/6, the remainder being such things as payments to dentists for oral surgery, and salary or sessional payments to physicians. Increases in fee payments to physicians were partitioned into the effects of increases in population insured, changes in fee schedules, increases in the supply of physicians per capita, and increases in utilization, or at least constant-fee billings, per physician.

This allocation of program cost increases, carried out by staff of the federal Department of National Health and Welfare, was repeated in each subsequent Annual Report under the Medical Care Act, down to the Report covering the 1980/1 fiscal year which was released in 1983. But as described in Chapter 1, in April 1984 the federal Canada Health Act was passed, consolidating and superseding the Medical Care Act and the Hospital Insurance and Diagnostic Services Act. It established new reporting requirements, whose specific details have as yet (mid-1985) not emerged. The 1980/1 Report is thus the last available in the series dating back to the initiation of the federal medical insurance program; and subsequent reports, when available, may be neither consistent with, nor as comprehensive as, the previous reports. Nevertheless, it is possible to reconstruct the allocation of program cost increases using the same methods as in the published reports, and this has been done for the two year period from 1980/1 to 1982/3, and for 1982/3 to 1983/4.

Table 2-1 shows the allocation of annual increases in program payments to fee-practice physicians, for all Canada, for the period from 1971/2 to 1980/1, reproduced from and in earlier years calculated from the federal annual reports. (The column heads in this table refer to % changes between fiscal years; thus 79 - 80 is the change from 1979/80 to 1980/81). Data disaggregating the period from 1971/2 to 1974/5 were not available.

Such an "allocation" is, of course, an accounting exercise whose causal significance is implicit. It is based on the identity relationship, that total outlays are equal to the product of population covered multiplied by outlays per capita, which in turn are the product of outlays per physician multiplied by physicians per capita. Outlays per physician depend upon the level of fees paid and the volume of servicing, or at least billing, activity per physician. "Utilization" per physician, or physician workload, is thus determined as a residual after increases in outlays have been reduced by increases in fee schedules, population, and numbers of physicians; it is not measured directly.

TABLE II.1

ADJUSTED TOTAL PROGRAM EXPENDITURES UNDER THE MEDICAL CARE ACT
AVERAGE ANNUAL RATES OF CHANGE IN SELECTED COMPONENTS OF FEE PAYMENTS TO PHYSICIANS
CANADA, 1971 to 1980

	79 - 80	78 - 79	77 - 78	76 - 77	75 - 76	74 - 75	71 - 74	A74 - 80	B74 - 80
Aggregate Increase in Fee Payments to Physicians:	15.9%	11.4%	10.9%	10.0%	11.2%	14.8%	10.2%	12.3%	12.4%
Components of Fee Payment Increase:									
1. Insured Population:	1.3%	0.9%	0.9%	1.0%	1.2%	1.5%	1.4%	1.1%	1.2%
Per Capita Fee Payment:	14.5%	10.5%	10.0%	8.9%	9.9%	13.1%	8.6%	11.1%	11.1%
2. Price (Fee Level):	10.7%	6.7%	6.2%	7.8%	8.1%	6.2%	2.4%	7.6%	7.4%
Utilization:	4.7%	4.4%	4.4%	2.0%	2.9%	8.1%	7.5%	4.4%	4.6%
3. Physician Supply:	3.1%	2.9%	2.5%	3.2%	3.9%	4.8%	5.5%	3.4%	3.1%
Payments per Physician:	12.5%	8.3%	8.2%	6.6%	7.0%	9.5%	4.6%	8.7%	9.0%
4. Insured Population:	1.3%	0.9%	0.9%	1.0%	1.2%	1.5%	1.4%	1.1%	1.2%
Price (Fee Level):	10.7%	6.7%	6.2%	7.8%	8.1%	6.2%	2.4%	7.6%	7.4%
Per Capita Utilization:	3.4%	3.5%	3.5%	1.0%	1.6%	6.5%	6.1%	3.2%	3.4%
5. Insured Population:	1.3%	0.9%	0.9%	1.0%	1.2%	1.5%	1.4%	1.1%	1.2%
Price (Fee Level):	10.7%	6.7%	6.2%	7.8%	8.1%	6.2%	2.4%	7.6%	7.4%
Physicians Per Capita:	1.8%	2.0%	1.6%	2.2%	2.7%	3.3%	3.9%	2.3%	1.9%
Activity per Physician:	1.6%	1.5%	1.9%	-1.1%	-1.0%	3.1%	2.1%	1.0%	1.4%
6. Consumer Price Index: (Calendar Years)	10.15%	9.13%	8.96%	7.99%	7.51%	10.80%	7.72%	9.08%	9.08%
7. Real Fee Increase: (Fees over C.P.I.)	0.50%	-2.23%	-2.53%	-0.18%	0.55%	-4.15%	-4.94%	-1.35%	-1.54%

TABLE NOTE: The Columns headed A74 - 80 and B74 - 80 reflect a degree of inconsistency in the successive Annual Reports from which this Table is derived. Column A cumulates the entries in the Table; Column B is taken from Table 5 of the 1980/81 Report. In general the data correspond; but there is an obvious discrepancy in the physician supply data, which carries over into the utilization per physician residual. It appears that earlier data have been revised, but the Annual Reports do not provide any information as to which years have been changed. Comparing the data in this Table with other sources indicates that the Canada Health Manpower Inventory data (Canada, Health and Welfare Canada, 1984b) parallel those in the B Column; between 1974 and 1980 Active Civilian Physicians per capita rose at an average annual rate of 1.69% and the number less interns and residents rose at an annual rate of 1.84%. But exploration of the detailed data on individual years presented in Chapter III shows physicians per capita and utilization per physician estimates which closely parallel the individual-year data in this Table for the period 1974 to 1978. Only from 1978 to 1980 do we find increases in physician supply per capita which are anomalously high (and increases in utilization per physician correspondingly low) in the Annual Report data. Yet why should the discrepancies be in the most recent data?

Population Change

It is readily apparent from Table 2-1 that growth in insured population has played a stable, slowly declining, and relatively unimportant role in the escalation of program costs. The rate of growth of the Canadian population fell very sharply in the mid- to late 1960s, and has continued to drift downward during the 1970s and early 1980s. During the Medicare period it has contributed between 1% and 2% per year to increases in program outlays, and it is likely to continue at a rate of about 1% per year for the foreseeable future.

Of course these data merely count total persons insured; they take no account of the demographic mix of the population. As is frequently pointed out, falling birth rates and more recently increases in the rate of extension of life expectancy have increased the proportion of the population which is older and uses more health care. One might therefore argue that demographic influences on program costs will be, and/or have been, greater than these numbers suggest.

But this argument turns out to be misconceived, when one actually explores the detailed data on demographic mix and utilization patterns by age. While it is true that the profile of health care utilization by age group rises quite steeply in the older ages, this is primarily the result of higher rates of institutionalization, for both acute hospital care and particularly long-term care, at older ages. The profile of use of physicians' services, both ambulatory and in hospital, rises much less steeply.

Reflecting this difference, the most recent projection of the impact of aging on per capita utilization of health care services in Canada (Woods Gordon, 1984) suggests that from 1981 to 2021 the aging of the Canadian population will increase utilization of physicians' services by only 12.8%, or 0.30% per year. Its principal effects will be on utilization of long-term care (1.34% per year) and acute hospital care (0.97% per year), although even in those sectors the effects of aging _per se_ are projected to be much less dramatic than is usually suggested in popular rhetoric. The Woods Gordon projections are only the latest in a series of such studies of the effects of demographic projections on health care utilization in Canada (although the first to use the new 1980-82 mortality tables). A survey and discussion of these studies is provided in Evans (1983b, 1985).

These comments apply _a fortiori_ to the period covered in Table 2-1. The principal source of increase in the average age of the population over this period was the drop in births, not the increase in life expectancies among the aged. This drop reduced the proportion of the population in the very young age groups, who are also relatively high users of physicians' services. Calculating the impact of these offsetting effects, Grenier (1979) concluded that changes in demographic structure between 1961 and 1976 had had no net effect on costs of hospital and medical care.

A similar analysis for the period from fiscal 1974/5 to 1980/1 is reported in the 1980/81 Annual Report under the Medical Care Act (p. 22), based on age-sex specific data on utilization of physicians' services from four provinces. It indicates that changes in age-sex composition added about 0.54% per year, on average, to per capita costs of these services, an amount which, while small, is still substantially larger than the Woods Gordon estimates for the post-1981 period. No details of the methodology are given. A comprehensive analysis of the impact of such changes on national physicians' services costs for the post-1971 period does not appear to have been done, but one can confidently assume that any positive effects would not be large.

Physician Supply

Of greater quantitative significance is the substantial increase in the supply of physicians in Canada during the post-1971 period. Here two sub-periods or policy regimes must be distinguished, before and after 1975.

Public policy toward physician manpower in the early 1970s was still dominated by the attitudes of the 1960s, a belief in "shortages" and in the desirability of increases in numbers. The Royal Commission on Health Services (Hall Commission, (Canada, 1964)), which did its work in the early 1960s, relied upon population forecasts embodying birth rates from the height of the baby boom, and (like everyone else) failed to forecast the "great obstetrical contraction" of the mid-1960s. Its forecasts of total Canadian population for 1986 are 31.5 million; the actual will be about 6 million lower. Furthermore, the Commission took the view that there were substantial "unmet needs" for health care in the country in 1960 - which may then have been true - and that in any case the universal public medical insurance program which it was recommending to finance the meeting of those needs would greatly expand demands for service and desired utilization rates.

This forecast combination of continued rapid population increase and rapid increase in per capita utilization rates was expected to put severe strain on available medical manpower. The solution was the encouragement of rapid physician in-migration, and expansion of domestic medical school capacity by founding new schools and expanding existing ones. Both these policies were adopted. In the late 1960s, physician in-migration was adding more new physicians to the Canadian stock each year than was domestic production. The peak year was 1969, 1,347 immigrant physicians and 1,017 domestic graduates, (Canada, Health and Welfare Canada, 1980) compared with 668 and 773 five years before (Canada, Health and Welfare Canada, 1975). But physician in-migration remained rapid in the early 1970s, being over a thousand in both 1973 and 1974. By that time domestic production of physician graduates was also over a thousand per year, while the overall population growth rate was down sharply. Crude birth rates fell by about a third between the early 1960s and the early 1970s, and total births were off by about a quarter (Leacy (ed.), 1983).

The flood of new physicians began to place obvious pressures on health expenditures and provincial budgets in the early 1970s, as well as making demands for increased hospital capacity. Health and Welfare analysts estimated that 45.1% of the increase in medical care expenditures between 1971/2 and 1974/5 was associated with increases in the number of (fee-reimbursed) physicians per capita (as reported in the

Medical Care Act Annual Report for 1975/6). As shown in Table 2-1, this corresponded to an average annual rate of increase of about 3.9% per year over the 1971/2 to 1974/5 period.

Almost exactly at the end of this period, in February of 1975, the federal government changed its immigration regulations (with provincial and medical association encouragement and approval). Medicine ceased to be designated a "shortage" occupation, with a maximum number of occupational "points" associated with it, and instead became an occupation with no additional points attached. (Prospective immigrants to Canada receive "points" for desirable age, linguistic, educational, and occupational characteristics; acceptance depends on having a large enough overall point score.)

After this change, which was quite openly motivated by perceptions of an actual or imminent oversupply of physicians, in-migration of foreign physicians became substantially more difficult. Physician in-migration fell from 1090 in (calendar) 1974 to 806 in 1975, 401 in 1976, and 312 in 1977. But domestic production continued to expand, as the medical school openings and expansions planned in the mid- and late 1960s continued to come on stream. By 1978 it had reached 1766 per year (Canada, Health and Welfare Canada, 1984b), well over double its level in 1964, the year the Hall Report was released. Since then it has moved in the 1700-1800 range.

Following these trends, Table 2-1 shows very rapid rates of increase of physician supply per capita in the early years of the program. From 1971 to 1974, as noted above, increases in the supply of physicians per capita were on average 3.9% per year. The rate of increase slowed markedly after 1975; and by fiscal 1980/1 the rate of increase in physician supply per capita was down to 1.8% per year. (One should note that the data in Table 2-1 refer to numbers of fee practice physicians reimbursed by the public programs, while immigrant data refer to numbers of immigrants indicating medicine as their intended occupation, so the two need not match exactly.) At current rates of domestic graduation and current birth and death rates, however, this rate of annual increase will persist for the foreseeable - or at least projectable - future. Unless some restraint can be placed upon the supply of new domestic graduates, which implies the reduction of numbers of medical school training places, it appears that this source will continue to add about 2% annually to per capita costs of physician services in Canada. It will be recalled that this is about five or six times the size of the effect projected to follow from the changing age structure of the population.

Such a statement, of course, goes beyond the factoring of total expenditure growth into its components in an accounting sense, and embodies an implicit causal assumption. It implies that increases in the supply of physicians translate directly into increased utilization - that supply creates its own demand. The underlying theoretical framework for this assumption and the range of evidence which support it are too extensive to develop here, but are available in a number of places, e.g. Evans (1984).

What is important to note in this context is that the increases in physician supply, and the changes which take place in that rate of increase, do appear to be associated with corresponding increases in per capita costs. There is no apparent tendency for the level of billing activity per physician (adjusted for fee changes) to move in opposition to the increases in physician supply, which is what would be predicted by the hypothesis that per capita "demand" were independent of physician supply and either constant or growing at a constant rate. Indeed a simple correlation of the annual rate of increase in physicians per capita with that of fee-adjusted output per physician yields a weak positive result.

One might argue that there was more scope for absorption of increases in both manpower and output per physician in the early years of the universal insurance programs, although one would not want to make too much of this in view of the fact that in most provinces universal medical insurance coverage predated 1971. But this is nothing more than an appeal to unmeasured external variables, whose plausibility must inevitably rest in the mind of the appellant. In the data available in Table 2-1, there is no sign of saturation, or of capacity increases reaching any sort of limit in translation into utilization increases.

Furthermore, and particularly important, the increases in capacity are exogenously determined. Canadian medical school places are all provided in provincially-funded universities. They are heavily subsidized (annual tuition fees are in the neighbourhood of $1500 per year at present), and are always over-subscribed. Thus domestic production is a policy variable. And in-migration, as described above, is likewise, although under the direct control of the federal government rather than, as in the case of education, the provincial governments. One may therefore treat increases in the supply of physicians per capita as external "shocks" which appear to induce corresponding increases in utilization per capita rather than reductions in workload per physician.

Fees

The variable in Table 2-1 which shows the most variation is the rate of increase in physicians' fee levels. Fee schedules are negotiated in each province at periodic intervals (now usually annually) between the provincial reimbursing agency and the provincial medical association. Staff of the federal Department of Health and Welfare calculate from these provincial schedules an index of national fee levels. The process is difficult because the components of the provincial schedules change over time, and because the schedule structures differ from one province to the next. Moreover, the quantity weights differ across provinces. But these variations, while a source of some challenge to those trying to compile consistent province-specific and national aggregate indices, do not in the end appear to create major variations in the final product.

As Table 2-1 makes clear, the early years of the 1970s were a period of relatively small increases in physicians' fees. The introduction of the plans in many of the individual provinces had been associated with very large increases in the levels of reported billings per physician, which appear to have been largely a result of increased collections per service rather than increased workload. These increases in de facto fee levels came from both the virtual elimination of uncollectable accounts, and increased attention to "strategic billing" within existing fee schedules once the government was paying. In addition, in at least one province (Manitoba) a very large fee schedule increase was promulgated by the provincial medical association in anticipation of the introduction of the public plan. As physicians absorbed the resulting large increases in incomes in the late 1960s, provincial governments responded by granting quite small, or no, increases in fees in the early 1970s.

With the acceleration of general inflation rates in the early 1970s, the consequence was a remarkable drop in the real value of physicians' fees. The Medical Care Act reports do not break out the individual year data, but as Table 2-1 shows, the annual average drop in real fee levels per physician from fiscal 1971/2 to fiscal 1974/5 was just under 5% per year, or nearly 15% in three years. In the following year fees jumped sharply, almost tripling their growth rates in the 1971/2 to 1974/5 period; but general inflation rates in Canada also accelerated sharply. Real fees, adjusted for changing purchasing power, dropped by almost the same rate as they had in the previous three years.

One might have anticipated a rebound effect after 1975. But half way through the fiscal year, on October 14, 1975, the federal government announced a program of controls over "profit margins, prices, dividends, and compensation" - the Anti-inflation Act. Its effects on physicians were attenuated, because of controversy over the significance of legislative exclusion from controls of income increases due to increases in "productivity" - a slippery concept under fee-for-service reimbursement. But as shown in Table 2-1, physician fee increases more or less kept pace with inflation rates over the next couple of years. From 1975/6 to 1977/8 they neither gained nor lost significant ground, but they did not recoup any of the losses in the first half of the decade.

From 1977/8 on, however, inflation began to accelerate again, and physician fees once more began to slip behind, although at much slower rates than in the early 1970s. Annual fee increases in the 6% to 8% range seemed to become a pattern; and it took some time for physicians to achieve fee settlements which responded to the new inflation rates. Only in the 1979/80 to 1980/1 changes do fee increases once again match general price increases as reflected by the Consumer Price Index.

Over the nine year period as a whole, therefore, physicians' real fees fell by 20.9%, of which drop 17.7% occurred in the first four years, and the remaining 3.9% from 1975/6 to 1980/1. The general pattern was one of a period of squeeze followed by almost flat conditions, but with a slow continuing downtrend. But it is also clear that the general inflation rate has played a very important role. Fees never actually fell, in nominal terms; but inflation which physicians either failed to forecast, or were unable to allow for in their fee bargaining, resulted in substantial loss of ground. Nor, in this decade, were physicians ever able to achieve settlements which outran inflation Canada-wide to any significant extent.

Utilization or Activity Levels per Physician

After adjusting program costs for the influence of increases in population covered, numbers of physicians per capita, and fees paid per service provided, one is left with a residual which is the change in number of services per physician, weighted by their fees. It constitutes an index of quantity of output per physician, in real terms, although since it is a residual it also embodies any errors in each of the component series.

The remarkable thing about this series is perhaps what it does not show. As noted above, there is no sign of "market saturation" in these data. The steadily increasing number of physicians per capita is not resulting in less activity or output per physician. In fact, output per physician appeared to be rising most rapidly in the early 1970s, when physician supply was also rising most rapidly. One might, of course, argue that the cumulation of increases in physician supply was leading to a slow decline in the rate of increase in output per physician - there _is_ a downtrend in that number - but it is not very regular and in any case activity growth remains positive at the end of the period.

But if the residual lends little support to the hypothesis that utilization is exogenously determined, whether by "patient needs" or by "consumer preferences and prices", it is not wholly favourable to the "target income" hypothesis either. When physicians' fees fall, in real terms, that hypothesis predicts that they will increase their output levels such that overall income levels are maintained. In its extreme form, this view implies that controlling the costs of physicians' services by controlling fees, for an exogenous supply of physicians, is impossible. The data in Table 2-1 do not support this extreme form of the hypothesis.

The physician quantity response is not however negligible or irrelevant. While inflation-adjusted fees were falling by 20.9%, output per physician was rising by 12.9%, or about 1.35% per year. On a per-physician basis, therefore, the data in Table 2-1 imply that real incomes should have fallen by only 10.7%. The quantity response made up for half the drop in real fees.

Furthermore, the quantity response does seem to be strongest in those years when real fees were falling most rapidly. Of the total increase of 12.9%, 9.7% takes place in the first four years, from 1971/2 to 1975/6, when most of the drop occurred in real fees as well. From 1975/6 to 1980/1, output increase amounts to only 2.9%. As noted above, the fall in real fees during this five year period was only 3.9%. A simple correlation of the change in real fees with the change in real output per physician over this period, taking an arithmetic average of percent changes, yields a coefficient of about -.75, which is certainly consistent with "target income" behaviour.

But the years do not in fact appear to be independent observations. Rather there appear to be two different "regimes" in the data. A four-year period of rapidly falling real fees and rapidly rising real outputs in the early 1970s, with the latter effect about half the strength of the former, is followed by a period of greater stability during which output per physician continues to trend more slowly upward, and real fees drift downward. The net effect on physician incomes over the 1975/6 to 1980/1 period is only -1.1%, compared with -10.7% from 1971/2 to 1975/6.

The Early Eighties

While no Annual Reports of operations under the Medical Care Act have been released since that for the 1980/1 year, it is possible to compute similar statistics on the same basis for more recent years. This has been done for the two-year period from 1980/1 to 1982/3, and for the period 1982/3 to 1983/4. These data are presented in Table 2-2, and serve to supplement the conclusions which one might draw from Table 2-1.

First, it is clear (and unsurprising) that population growth continues to be a stable and small component of the overall increase in program costs. Growth in population covered averaged 1.2% per year from 1980/1 to 1982/3, falling to 1.0% in the next year, but the apparent changes are probably due to some combination of rounding-off, and the effects of post-censal revisions carried into the data in different years. A steady increase of 1% or just above is likely to continue. Similarly, the growth in numbers of fee-reimbursed physicians per capita seems to have settled into a steady rate of at or just below 2%. The long-run implications of this statistic for program costs and stability are slowly beginning to seep into the minds of those responsible for Canadian health policy, and increasingly we are observing calls for restriction on the numbers of medical graduates. When, or if, these translate into action, this component of growth in physicians' services

TABLE II.2

ADJUSTED TOTAL PROGRAM EXPENDITURES UNDER THE MEDICAL CARE ACT
AVERAGE ANNUAL RATES OF CHANGE IN SELECTED COMPONENTS OF FEE PAYMENTS TO PHYSICIANS
CANADA, 1980 to 1983

	80 - 82	82 - 83	A74 - 83	B74 - 83
Aggregate Increase in Fee Payments to Physicians:	16.5%	13.8%	13.4%	13.4%
Components of Fee Payment Increase:				
1. Insured Population:	1.2%	1.0%	1.1%	1.2%
Per Capita Fee Payment:	15.2%	12.7%	12.2%	12.2%
2. Price (Fee Level):	11.7%	9.2%	8.7%	8.6%
Utilization:	4.3%	4.2%	4.4%	4.5%
3. Physician Supply:	3.0%	3.0%	3.3%	3.1%
Payments per Physician:	13.1%	10.5%	9.8%	10.1%
4. Insured Population:	1.2%	1.0%	1.1%	1.2%
Price (Fee Level):	11.7%	9.2%	8.7%	8.6%
Per Capita Utilization:	3.1%	3.2%	3.2%	3.3%
5. Insured Population:	1.2%	1.0%	1.1%	1.2%
Price (Fee Level):	11.7%	9.2%	8.7%	8.6%
Physicians Per Capita:	1.8%	2.0%	2.1%	1.9%
Activity per Physician:	1.2%	1.2%	1.1%	1.4%
6. Consumer Price Index: (Calendar Years)	11.64%	5.75%	9.27%	9.27%
7. Real Fee Increase: (Fees over C.P.I.)	0.05%	3.26%	-0.54%	-0.63%

TABLE NOTE: The Columns headed A74 - 83 and B74 - 83 are generated by cumulating the individual Table entries with Columns A74 - 80 and B74 - 80 respectively in Table 2-1. See that Table for a discussion of the discrepancies.

costs should fall (since there has been no sign in the previous data of offsetting changes in output per physician). But it has not happened yet.

The main change in the post-1980/1 data is the considerable acceleration in the rate of growth in physicians' fees. It appears that the sharp jump from 1979/80 to 1980/1 reported in Table 2-1 was the beginning of a new period of rapid escalation. Fee settlements whose Canadian average had been in the 6% to 8% range from 1974/5 to 1979/80 moved up to a new 10% - 12% band, dropping to 9.2% between 1982/3 and 1983/4.

For the first three years, these new much higher settlements were almost exactly in line with inflation. From 1979/80 to 1982/3, real fees rose 0.6%, which contrasts with their downtrend over the previous eight years. But in 1983/4 it seems clear that provincial negotiators (like many others) failed to forecast the sharp drop in inflation rates following the "Great Recession" of 1982. Fee settlements nation-wide were sharply above inflation rates, for the first time in the history of the programs. As a result, the drop in real fees over the whole period, 1971/2 to 1983/4, is only 18.2% or 1.66% per year, compared with 20.9% or 2.57% over the nine-year period from 1971/2 to 1980/1. One year's mis-forecast inflation rate, coming at the end of several years of very aggressive physician bargaining, changes the annual average picture by nearly an entire percentage point. And provincial reimbursement agencies, after seeing several years of large settlements "ratified" by general inflation rates, suddenly began to discover a "cost crisis".

Again, however, the remarkable feature of the residual, output per physician, is what it did not do. It continued at an average rate of 1.2% per year from 1980/1 to 1983/4, a little below its value of 1.36% in the previous nine years, but showing no response whatever to the sudden increase in real fees from 1982/3 to 1983/4. It may be that the reaction is delayed, and will show up in next year's data. Or it may be that the real fee increase is being treated by most physicians as "catch-up", and not as a reason to reduce output levels. But whatever the explanation, it is clear that the negative correlation between changes in real fees and changes in output per physician becomes substantially weaker in the 1980s. It is true that in all three of these years, increases in real fees are above their average values from 1971/2 to 1983/4, and increases in real outputs are below. But the correlation between them is -.59 over the longer period, compared with -.75 in the first nine years.

The net result is that while real fees were falling 18.2% over twelve years, output per physician was rising 17.1%. The two amounts do not offset one another; the overall shortfall per physician is still 4.3%. But one year of relaxation by provincial fee bargainers has closed over half the gap which had opened up from 1971/2 to 1975/6 and had been maintained for the next seven years. Meanwhile output per physician appears to march ahead, slowly and steadily, at or a bit above 1% per year, without much sensitivity either to increases in physician supply, or (in more recent years) to changes in the real fee level.

Conclusions

The aggregate data thus permit one to claim both effectiveness and ineffectiveness for attempts to control physician fees in the Canadian system. On the one hand, after twelve years of hard bargaining the reduction in real fees is almost entirely offset by the increase in output per physician. From this one could infer that physicians have, in fact, been able to adjust their levels of output to offset the effects of fee controls, and that direct fee limitations are therefore ineffective as a mechanism for controlling the overall costs of physicians' services. But on the other hand, this argument neglects both the time pattern of changes, which indicates that over a period at least controls had a substantial effect, and more importantly the question of what would have happened in the absence of the controls.

The latter question is inherently speculative; but such speculation is unavoidable whether one argues either that fee negotiation has been effective in controlling costs, or that it has not. Each implies some hypothesis as to what else might have happened. In particular, if the observation that real output increases almost offset real fee decreases is used to infer lack of effect, the implicit assumption is that in the absence of fee limitations through negotiation, neither real magnitude would have changed, or they would have changed in opposite directions. Yet this seems highly unlikely.

As evidence, we can cite both the experience of the Canadian health care system prior to 1971, and that of the U.S. system after 1971. Prior to 1971 in Canada, both real output and real fees of

Canadian physicians rose steadily and substantially over a period of decades. The exact mix between the two is difficult to determine, because increases in collections ratios over that period, resulting from the spread of private insurance, increasing general affluence, and improved business practices among physicians, led to de facto price increases which show up in the data as "productivity" increases. But a simple measure of increases in list fees of physicians shows them rising 91.9%, in the twenty years from 1951 to 1971, or 3.3% per year on average, while the Consumer Price Index rose only 51.5% or 2.1% per year (Barer and Evans, 1983, Table 3, p.725).

An estimate of the actual price increase, allowing for improvements in collections ratios, suggests that the true rate of increase, in prices actually received, may have been as much as 1.5% to 2% higher over this period. At the same time, the rate of "real" output per physician, or billings adjusted for changes in fees, was rising rapidly throughout the pre-1971 period. If one accepts the increase in nominal or list fees as valid, output per physician rises by 3.1% per year from 1951 to 1971, and 4.0% per year from 1954 to 1971. Adjusting for changes in the relation between list fees and actual fees collected might reduce this growth in apparent productivity per physician to between 2.0% and 2.5% per year in the 1954-71 period, still toward the upper end of the range observed in the post-1971 era (Barer and Evans, op. cit., Tables 5 and 6, pp.736-7).

Thus the years after 1971 represent a significant break in the pattern of annual increases in real or inflation-adjusted physicians' fees in Canada. Negotiation of fees between physicians and government appears to be associated with rates of increase of fees which run behind the general level of inflation, while independent determination of fees by physicians themselves (through the promulgation of collective fee schedules) was associated with fee increases substantially more rapid than general price changes. And while increases in "output" per physician in the period of limited fee increases served to offset a substantial share of the impact of falling real fees, these increases were smaller than those observed in the years when real fees were rising rapidly. On average, in fact, they were about half as large. It would be difficult, therefore, to argue that administered reductions in the rate of escalation of real fees had stimulated an increase in the rate of growth in real output per physician.

The data from the U.S. experience after 1971 have similar implications. Freeland and Schendler (1984) report that during the decade from 1972 to 1982, the Physicians' Fees component of the Consumer Price Index in the U.S. rose 144.5% compared to 113.2% for the All-Items Index, or 9.35% per year compared to 7.86% (Table 13, p.62). This average annual increase of 1.38% in real fees contrasts with the steady drop in Canada, and is quite close to the Canadian experience of 1.18% average annual increase over the twenty years from 1951 to 1971. As in Canada, the spread of both private and public insurance for physicians' services over the post-war decades probably induced a still more rapid increase in fees actually received, but since universal first-dollar coverage has not been achieved, this bias in reported or list fee data may be smaller in the U.S.

Freeland and Schendler do, however, report a drop in real service output per physician, of 0.8% per year from 1972 to 1982, cumulating to a fall of 7.7% over ten years. This contrasts with the Canadian increase of about 1.3% per year on average. The differential is just over 2% per year in favour of Canadian physicians, which would strongly support the view that they have reacted to fee limitations by pushing up output much faster than their U.S. counterparts.

But the Freeland/Schendler data on service output per physician are derived from the deflation of self-reported gross billings per physician by the CPI Physicians' Services component. If one instead derives a U.S. "real output" estimate from national health expenditures data on per capita expenditures on physicians' services, divided by numbers of active physicians (M.D.s and D.O.s) per capita and adjusted by the same price component, the resulting index of output per U.S. physician rises by 0.6% per year over the decade (Barer and Evans, 1985). (The discrepancy between this and the value derived from self-reported gross billings data might repay further investigation.) There remains a differential suggesting more rapid increase in "real billings" per physician in Canada, but the differential is now much smaller, and in particular is perhaps one fifth to one quarter of the difference in the growth rates in real fees.

One is left, then, with the conclusion that the process of global fee negotiation really has served to reduce the level of physicians' fees in Canada below what it otherwise would have been, and that offsetting increases in output per physician were not only incomplete, but were very little larger, if at all, than they would have been if fees had not been constrained. This suggests that the fee controls were, in fact, effective, and that physicians' fees and costs are now lower than they would have been, had the universal insurance programs not been put in place at the end of the 1960s.

The effects implied by these data are, moreover, quantitatively significant. If U.S. fees outpaced the U.S. inflation rate by between 1% and 1.5% per year, and Canadian fees ran behind by at least the same amount (the 1983/4 experience changes the Canadian numbers substantially), then the net swing is about 2.5% to 3% per year. Of this, differences in the rate of increase in output or utilization per physician might offset two-thirds or more, just over 2%, if one measures U.S. physician output by self-reported billings, but only about one quarter, if one uses deflated total expenditures on physicians' services per active physician. The former implies a cost differential in favour of Canada of 0.5% - 1% per year: the latter of perhaps 2% - 2.5%. Over a period of a decade or more, the latter differential becomes a very important part of the overall difference in the growth patterns of health care costs in Canada and the United States.

These percentages are deliberately reported in rough terms, because the data sources and time periods may not be strictly comparable. The Medical Care Act Annual Reports do not spell out all their sources and methodology, and in any case are fiscal year data compared with Freeland and Schendler's calendar years. Moreover, they refer only to payments under the Medical Care Act to fee-for-service physicians, which is the bulk, but not the totality, of expenditures on physicians' services in Canada.[1] In the next chapter, therefore, we draw on national health expenditure data for Canada and the individual provinces which are both comprehensive, and compiled by the federal Department of National Health and Welfare so as to be as comparable as possible with similar U.S. series.

FOOTNOTES - CHAPTER 2

1 To indicate the orders of magnitude involved, total expenditures on physicians' services in Canada in 1980 were $3284.7 million; the payments to fee-for-service physicians in fiscal 1980/1 underlying Table 2-1 were $3009.2 million or 91.6% of the total. The difference includes non-fee-for-service payments through the medical care insurance plans, as well as other sources of physician incomes such as Workers' Compensation and some direct charges to patients (see details in Chapter 1).

Chapter Two Data Sources

The data in Table 2-1 are drawn from the Annual Reports under the Medical Care Act (Canada, Department of National Health and Welfare, annual), various years. Columns 1 and 8, percent changes between fiscal 1979/80 and fiscal 1980/1, and annual average percent changes between 1974/5 and 1980/1, are taken directly from Table 5 of the 1980/1 Report, issued in 1983. Columns 2 to 4 are drawn from the corresponding Tables in the Reports from 1979/80 back to 1977/8. The earlier Reports do not provide percentage changes by component directly, but columns 5 and 6 were calculated from the 1976/7 and 1975/6 Reports by applying the percentage allocation of cost increases, which *is* reported, to the overall percentage increase in costs. Column 7, increases in components from 1971/2 to 1974/5, was derived from the 1979/80 and 1978/9 Reports. These give average percentage increases by component from 1974/5 to 1978/9, and from 1971/2 to 1978/9, in Tables 3 and 4 respectively, and these were used to derive the implicit 1971/2 to 1974/5 values.

Expenditures reported are "fully adjusted fee payments per physician" over each span of years, thus excluding non-fee payments to physicians, and payments, fee or otherwise, to non-physicians. They also treat consistently the boundary between medical and hospital insurance plan payments, as applied to ambulatory diagnostic services provided by hospitals, and they attempt to adjust for major changes in provincial claims inventories. But there is a general *caveat* in the Reports about changes through time in the methodologies for measuring both fee schedule changes and physician supply, which are not carried back to revise data from previous Annual Reports - a single consistent series has not been produced.

The Table column heads refer to, e.g., 79 - 80, as the percent change between fiscal 1979/80 and 1980/1, the fiscal year being labelled by the calendar with which it principally overlaps. The C.P.I. data in the Table, however, are for the calendar year. Since claim payments run behind dates of service by several weeks, however, the bias thus imparted to the "inflation-adjusted" data is very small. C.P.I. data are widely available; these are reproduced from Barer and Evans (1985).

The data in Table 2-2 are not from published sources; as noted no Annual Reports have been published since 1983 for the 1980/1 fiscal year. But the component allocations have been carried out in the same way and on the same data sets as those reported in Table 2-1, and are as far as we can tell comparable.

Chapter 3

Provincial Expenditure Patterns, Before and After Medicare

Per Capita Expenditures on Physicians' Services

The previous chapter focussed on data from the Annual Reports under the Medical Care Act, and discussed the behaviour of the components of change in total program payments, nation-wide, to fee-for-service physicians. In this chapter we present data on total expenditures, from all sources, on services of physicians. The federal Department of National Health and Welfare assembles data on total health expenditures, for Canada and for each of the provinces, covering institutional care (hospitals and nursing homes), professional services, drugs and appliances, and other items. These series are available annually since 1960 and their construction parallels that of the series reported in the U.S. Health Care Financing Review, and previously in the Social Security Bulletin. It is these series which are compared with the overall level of Canadian GNP in Chapter 1, to indicate the share of health care expenditures/incomes within the overall economy.

Within professional services, of course, the dominant components are services of physicians and of dentists, which make up roughly 15% and 5% respectively of total health spending. The former includes fee payments to self-employed physicians, as well as to medical groups and clinics in which physicians might be employed by other physicians, and sessional payments by hospitals or voluntary societies. Earnings of salaried chiefs of service in hospitals or payments to teaching hospital medical staff, or salaries of physicians employed in provincial or municipal public health systems are not, however, included in this total. They are covered by other health care expenditure components - hospitals and public health respectively. Payments to university teaching faculty in a medical school which come through the university's budget rather than through that of a teaching hospital would not be included at all.

These data on physicians' services expenditure go back well before the 1960 date for total health expenditures. A more limited collection of data, for hospitals, physicians, dentists, and prescribed drugs (about two-thirds of the total) goes back to 1945, while estimates of total expenditures on the first three categories alone are available back to 1926. But these are national data, not broken down by individual province.

In Table 3-1 we present data from 1960 to 1982 on per capita expenditures on physicians' services for Canada and each of the provinces. These are all in $ current, unadjusted for either general inflation rates or changes in medical fees across time or regions. These data cover roughly one decade on either side of the pivotal year of 1971; but it must be kept in mind that the provinces established their universal, comprehensive public insurance plans at different times. Coverage has been universal in Saskatchewan since 1962, B.C. "went public" in 1968, most of the provinces established their plans during 1969, Quebec and Prince Edward Island joined in 1970, and New Brunswick began its plan on January 1, 1971. Furthermore, the level of private insurance coverage, by both non-profit (largely comprehensive, service

Table III.1

EXPENDITURE ON PHYSICIANS' SERVICES, PER CAPITA, CANADA AND PROVINCES, 1960 to 1982

	1960	1961	1962	1963	1964	1965	1966	1967
Canada	$19.82	$21.25	$21.82	$23.91	$25.65	$27.70	$30.19	$33.62
Nfld	$8.89	$9.14	$9.12	$10.29	$11.44	$12.02	$13.02	$14.53
PEI	$13.16	$12.90	$12.73	$15.21	$15.13	$16.95	$17.95	$19.77
NS	$15.95	$16.67	$17.16	$17.41	$19.18	$20.53	$22.96	$24.06
NB	$13.42	$14.27	$14.07	$15.63	$16.63	$17.87	$18.52	$22.26
Que	$15.06	$17.04	$18.16	$20.09	$21.04	$22.91	$25.29	$27.65
Ont	$23.18	$24.78	$25.42	$28.12	$30.62	$33.17	$35.54	$40.13
Man	$21.86	$24.90	$25.36	$25.53	$26.00	$28.68	$30.91	$33.73
Sask	$19.90	$19.77	$16.89	$26.13	$26.92	$27.86	$30.25	$31.61
Alta	$20.64	$21.48	$22.93	$22.91	$24.44	$26.64	$29.26	$35.67
BC	$28.26	$28.80	$29.11	$29.42	$32.59	$34.02	$38.14	$40.60

	1968	1969	1970	1971	1972	1973	1974	1975
Canada	$38.02	$42.87	$48.80	$57.91	$63.52	$67.21	$74.11	$84.22
Nfld	$18.55	$26.22	$29.38	$31.05	$31.82	$36.94	$39.45	$45.32
PEI	$22.84	$27.48	$27.56	$40.83	$41.22	$46.26	$61.88	$54.14
NS	$28.93	$34.12	$42.62	$45.55	$52.37	$55.75	$60.65	$74.62
NB	$24.33	$27.16	$29.57	$36.55	$42.38	$43.85	$47.17	$54.43
Que	$30.20	$33.23	$35.99	$53.55	$61.14	$65.92	$73.73	$81.75
Ont	$45.58	$51.21	$59.29	$66.18	$70.37	$73.13	$80.68	$91.93
Man	$37.03	$46.09	$55.78	$57.11	$61.06	$64.75	$66.67	$70.17
Sask	$32.96	$36.15	$40.56	$45.04	$51.42	$56.91	$56.24	$64.28
Alta	$44.84	$47.74	$54.77	$62.01	$67.05	$69.99	$74.32	$86.11
BC	$45.44	$52.43	$58.10	$62.35	$68.77	$72.46	$83.56	$98.58

	1976	1977	1978	1979	1980	1981	1982
Canada	$91.34	$99.12	$108.04	$119.63	$136.46	$153.53	$179.03
Nfld	$53.36	$56.23	$61.59	$70.59	$81.80	$93.02	$107.19
PEI	$63.34	$69.40	$75.14	$81.83	$94.39	$109.93	$128.77
NS	$79.33	$88.66	$92.75	$101.67	$114.86	$131.58	$149.55
NB	$55.15	$58.29	$64.93	$71.65	$81.22	$97.76	$117.21
Que	$86.99	$95.34	$104.43	$111.44	$125.85	$130.03	$148.63
Ont	$98.07	$106.45	$116.24	$130.18	$150.44	$172.62	$200.59
Man	$80.62	$87.54	$94.29	$109.37	$119.02	$137.31	$157.46
Sask	$71.87	$76.59	$84.98	$95.59	$110.39	$127.95	$158.15
Alta	$93.24	$98.92	$107.20	$119.27	$137.45	$157.14	$191.51
BC	$114.58	$123.68	$134.19	$149.95	$167.84	$197.16	$239.77

benefit) and for-profit (more commonly limited, indemnity benefit) insurers, varied substantially from province to province at the time the public plans were established. Thus one cannot look for the impact of public, universal, comprehensive coverage to be either simultaneous or of the same magnitude across provinces.

Certain patterns, however, are readily apparent. In 1960, the range of expenditure from highest to lowest province was 3:1, in 1971 this range had fallen to 2:1. The lowest province, Newfoundland, rose sharply, while the highest, British Columbia, fell back equally dramatically. The pattern of equalization is not as clear-cut when we look at the other eight provinces, but in general the dispersion of provincial values around the national mean was significantly reduced during the introduction of Medicare. Since 1971 it appears to have increased again. B.C. expenditures have risen sharply relative to the national average, from 7.7% above in 1971 to 34% above in 1982, while Quebec has fallen from 7.5% below average in 1971 to 19.6% below average in 1982.

The introduction of the public plans at the end of the 1960s was also a period of very rapid growth in costs of physicians' services. The individual provinces each showed substantial jumps in expenditures per capita in the years spanning the date of introduction, and the national cost rose by 14.6% per year, on average, during the four years from 1967 to 1971. Individual provincial increases were quite spectacular: expenditures per capita in Quebec rose 48.8% in one year from 1970 to 1971. Increases of around 50% occurred in several provinces - Manitoba and all from Quebec east - from the year before introduction to the year after. (It is suspected, however, that there may have been some under-reporting of incomes in the eastern provinces prior to the public plans.)

The public plans were thus a financial bonanza for physicians in a number of provinces, at least in the period immediately surrounding their introduction. But expenditure increases slowed markedly after 1971, averaging 9.5% per year nation-wide from 1971 to 1979 during a time when overall inflation rates were much more rapid than in the 1960s. Physicians' share of national income accordingly fell sharply in the early 1970s, as shown in Table 3-2, from 1.32% in 1971 to 1.10% in 1976, despite continued rapid increases in the number of physicians relative to the population. From then until 1981 it remained very stable, between 1.11% and 1.08%.

The 1971 figure of 1.34% was in fact the high point attained by physicians, following the surge of the late 1960s. For the first decade after 1945 physicians had received a fairly stable share of about three-quarters of one percent of GNP. This rose sharply during the late 1950s to about 1%, coinciding with the introduction of the public hospital insurance plans. It stabilized in the early 1960s, jumped up to its peak between 1965 and 1971, and then dropped down to 1976.

Individual provinces tend to follow the national experience fairly closely, with the exception of B.C. and Quebec. These two provinces, as noted above, are outliers on the high and low sides respectively during the 1970s. The share of provincial income going to physicians in B.C.

Table III.2

EXPENDITURES ON PHYSICIANS' SERVICES, AS A PERCENTAGE OF GROSS NATIONAL PRODUCT, CANADA, 1960 to 1982 AND AS A PERCENTAGE OF PROVINCIAL GROSS DOMESTIC PRODUCT, 1970 to 1981

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Canada	1.21%	1.32%	1.32%	1.20%	1.13%	1.16%	1.10%	1.10%	1.10%	1.09%	1.11%	1.10%	1.24%
Nfld	1.27%	1.25%	1.26%	1.25%	1.13%	1.17%	1.17%	1.11%	1.13%	1.08%	1.25%	1.26%	
PEI	1.27%	1.78%	1.61%	1.45%	1.87%	1.40%	1.43%	1.49%	1.40%	1.35%	1.47%	1.54%	
NS	1.51%	1.52%	1.54%	1.44%	1.38%	1.53%	1.42%	1.46%	1.38%	1.38%	1.50%	1.52%	
NB	1.14%	1.30%	1.32%	1.18%	1.09%	1.12%	1.02%	1.01%	0.99%	0.91%	1.09%	1.10%	
Que	0.99%	1.37%	1.41%	1.34%	1.27%	1.27%	1.16%	1.19%	1.17%	1.14%	1.16%	1.07%	
Ont	1.24%	1.28%	1.23%	1.12%	1.08%	1.14%	1.06%	1.06%	1.08%	1.08%	1.14%	1.15%	
Man	1.50%	1.43%	1.39%	1.24%	1.09%	1.02%	1.04%	1.07%	1.05%	1.09%	1.09%	1.10%	
Sask	1.26%	1.19%	1.29%	1.09%	0.81%	0.82%	0.84%	0.86%	0.84%	0.83%	0.81%	0.83%	
Alta	1.22%	1.27%	1.25%	1.05%	0.81%	0.82%	0.80%	0.77%	0.74%	0.71%	0.72%	0.76%	
BC	1.36%	1.33%	1.31%	1.14%	1.15%	1.26%	1.24%	1.22%	1.21%	1.19%	1.23%	1.28%	

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Canada	0.93%	0.98%	0.95%	0.99%	0.99%	0.98%	0.98%	1.03%	1.09%	1.13%

fell sharply in the early 1970s, but recovered in 1975, and by 1981 was only 3.8% below its 1971 value (5.9% below its 1970 peak). The national average was 16.7% lower in 1981 than in 1971. In Quebec, on the other hand, physicians' share of provincial income stabilized from 1976 to 1980, but then fell again. Its 1981 value of 1.07% was 21.9% below its 1971 value, and 26.2% below the 1972 peak.

While these two provinces display the most atypical patterns of expenditure growth during the post-1971 decade, however, they are not at the extremes in terms of income shares devoted to medicine. In 1981 Nova Scotia and Prince Edward Island spent 1.52% and 1.54% respectively of their provincial incomes on physicians' services (a substantial share of which was contributed by the federal government -see Chapter 1), while Alberta and Saskatchewan spent .76% and .83% -about half as much.

The end of the 1970s marks a resurgence in spending on physicians' services. From 1979 to 1982, as shown in Table 3-1, Canada-wide rates of increase in per capita spending on physicians' services have averaged 14.4% per year. In this expansionary period some of the individual provinces' rates of increase have been quite spectacular: B.C's annual growth rate averaged 16.9% per year from 1979 to 1982, Alberta's was 17.1%, while Saskatchewan hit 18.3% per year -over three years!

Yet the first two years, from 1979 to 1981, saw only a slight increase in physicians' share of national income. Both inflation and economic growth rates were high in this period, and provincial governments and economies were clearly able to absorb a significant amount of "catch-up" expenditure on physicians' services. The expansion of spending continued, however, into 1982 and the "Great Recession", when Canadian real GNP (adjusted for inflation) fell by about 5%.

The story from these data on spending thus parallels that from Chapter 2 on fee increases. Spending on physicians' services rose rapidly in line with general expansion, but continued to grow rapidly while the rest of the economy declined, with the result that physicians' share of national income rose sharply in 1982. Similarly fee settlements were very high in the early 1980s, but general inflation was likewise, until 1983, when fee settlements overshot inflation and real fees rose at their highest rate since the plans were established (Table 2-2). (The overshoot in fees occurs later because economic activity dropped off in 1982, and inflation rates did not come down until 1983.)

Physicians' Fee Schedules, Canada and Provinces

The expenditure data, however, are background to the central question, of the evolution and impact of the process of fee negotiation. Table 3-3 presents indices of physicians' fees, for Canada and for each of the provinces, from 1960 to 1983, which have been assembled from various unpublished releases by staff of Health and Welfare Canada, based upon the Canadian average in effect during 1971 set equal to 100.0. They represent the average fee level in effect during the course of a particular year; schedule changes during the year are averaged over the year as a whole.

Prior to 1971, or to the year in which public insurance was

Table III.3

INDICES OF PHYSICIANS' FEES, CANADA AND PROVINCES, 1960 to 1983
(CANADA, 1971 = 100.0)

Year	Canada	B.C.	Alta.	Sask.	Man.	Ont.	Que.	N.B.	N.S.	P.E.I.	Nfld.	C.P.I.
1960	69.9	84.3	78.1	64.5	65.2	69.3	71.3	62.7	66.7	n.a.	64.4	74.3
1963	74.5	82.9	78.0	65.5	76.9	74.1	78.8	67.9	69.8	65.8	70.9	77.2
1964	76.1	86.0	79.4	65.5	76.9	74.1	82.1	67.9	69.8	73.8	70.9	78.6
1965	78.7	86.0	81.3	65.5	76.9	78.5	82.6	67.9	69.8	73.8	70.9	80.5
1966	80.1	86.0	85.0	65.5	76.9	79.9	83.2	76.5	69.8	74.1	70.9	83.5
1967	86.6	94.5	91.0	66.1	85.4	86.5	93.2	85.2	73.8	74.2	74.8	86.5
1968	90.6	94.5	97.0	74.1	102.4	88.7	92.8	85.2	85.7	85.0	82.7	90.0
1969	96.1	100.9	99.3	81.3	102.4	95.4	95.8	94.1	87.1	85.0	82.7	94.1
1970	97.8	100.9	102.7	84.0	102.4	97.6	100.3	94.1	87.5	97.8	82.7	97.2
1971	100.0	100.9	106.2	87.8	102.4	100.5	100.3	94.1	87.5	97.8	82.7	100.0
1972	101.4	105.2	106.3	90.3	102.4	102.0	100.3	94.1	93.5	100.3	83.4	104.8
1973	102.3	112.9	107.9	93.8	102.4	102.0	100.3	94.1	99.6	101.2	89.4	112.7
1974	107.4	123.1	112.3	96.9	108.5	107.[illegible]	100.3	95.4	107.3	107.5	91.6	125.0
1975	114.2	141.7	122.6	108.5	114.0	112.8	100.3	106.2	122.7	113.9	99.8	138.5
1976	121.8	157.4	135.1	118.1	124.4	120.4	101.3	109.7	133.7	122.5	108.4	148.9
1977	132.0	164.1	144.5	126.1	133.1	128.8	118.0	117.5	140.4	131.0	110.3	160.8
1978	140.2	175.2	153.9	134.2	140.2	137.0	121.8	124.8	148.4	138.9	116.9	175.2
1979	150.6	189.0	164.6	145.5	151.2	149.0	127.0	138.9	159.1	150.7	124.0	191.2
1980	164.8	206.6	190.1	165.2	168.3	166.1	128.7	151.9	175.0	170.2	140.5	210.6
1981	184.2	241.7	214.5	186.8	193.2	184.5	137.7	174.6	195.6	187.4	157.3	236.9
1982	208.3	279.9	261.7	224.8	215.6	206.4	147.4	204.6	220.5	208.7	178.1	262.5
1983	227.5	300.0	281.3	241.0	226.5	232.2	158.9	220.7	241.4	224.3	189.8	277.6

introduced in each province, these indices are based upon the schedules promulgated by the provincial medical associations and used by the (physician-sponsored) not-for-profit, service-benefit medical insurance plans. These schedules did not, however, necessarily represent the actual level of fees received, as not all physicians used them, some practiced sliding-scale billing or price discrimination, and in any case, not all bills were collected. They therefore represent an underestimate of the rate of fee escalation before, and particularly during, the introduction of public insurance. For the post-Medicare period, however, they should be relatively reliable. Some biases may enter through the variation in claims inventories in particular provinces, and through changes in the prevalence of extra-billing in some provinces in the late 1970s, but these are unlikely to be quantitatively significant.

Tables 3-4 and 3-5 then set these fee schedules in context, first by dividing them through by the Consumer Price Index (also adjusted to equal 100.0 in 1971) to yield real or constant-purchasing-power fees, and then by using them to deflate the data on expenditures per capita to yield an estimate of constant-fee or quantity of services utilization per capita.

Finally Table 3-6 presents data on the population per Active Civilian Physician, by province and year, and Table 3-7 multiplies each of these province/year specific values by the corresponding value of constant-fee utilization per capita, to yield an estimate of real service output per physician.

Table III.4

INDICES OF PHYSICIANS' FEES, IN CONSTANT $ OF 1971, DEFLATED BY THE CANADIAN ALL-ITEMS C.P.I. (CANADA, 1971 = 100.0)

Year	Canada	B.C.	Alta.	Sask.	Man.	Ont.	Que.	N.B.	N.S.	P.E.I.	Nfld.	C.P.I.
1960	0.94	1.13	1.05	0.87	0.88	0.93	0.96	0.84	0.90	n.a.	0.87	74.3
1963	0.97	1.07	1.01	0.85	1.00	0.96	1.02	0.88	0.90	0.85	0.92	77.2
1964	0.97	1.09	1.01	0.83	0.98	0.94	1.04	0.86	0.89	0.94	0.90	78.6
1965	0.98	1.07	1.01	0.81	0.96	0.98	1.03	0.84	0.87	0.92	0.88	80.5
1966	0.96	1.03	1.02	0.78	0.92	0.96	1.00	0.92	0.84	0.89	0.85	83.5
1967	1.00	1.09	1.05	0.76	0.99	1.00	1.08	0.98	0.85	0.86	0.86	86.5
1968	1.01	1.05	1.08	0.82	1.14	0.99	1.03	0.95	0.95	0.94	0.92	90.0
1969	1.02	1.07	1.06	0.86	1.09	1.01	1.02	1.00	0.93	0.90	0.88	94.1
1970	1.01	1.04	1.06	0.86	1.05	1.00	1.03	0.97	0.90	1.01	0.85	97.2
1971	1.00	1.01	1.06	0.88	1.02	1.01	1.00	0.94	0.88	0.98	0.83	100.0
1972	0.97	1.00	1.01	0.86	0.98	0.97	0.96	0.90	0.89	0.96	0.80	104.8
1973	0.91	1.00	0.96	0.83	0.91	0.91	0.89	0.83	0.88	0.90	0.79	112.7
1974	0.86	0.98	0.90	0.78	0.87	0.86	0.80	0.76	0.86	0.86	0.73	125.0
1975	0.82	1.02	0.89	0.78	0.82	0.81	0.72	0.77	0.89	0.82	0.72	138.5
1976	0.82	1.06	0.91	0.79	0.84	0.81	0.68	0.74	0.90	0.82	0.73	148.9
1977	0.82	1.02	0.90	0.78	0.83	0.80	0.73	0.73	0.87	0.81	0.69	160.8
1978	0.80	1.00	0.88	0.77	0.80	0.78	0.70	0.71	0.85	0.79	0.67	175.2
1979	0.79	0.99	0.86	0.76	0.79	0.78	0.66	0.73	0.83	0.79	0.65	191.2
1980	0.78	0.98	0.90	0.78	0.80	0.79	0.61	0.72	0.83	0.81	0.67	210.6
1981	0.78	1.02	0.91	0.79	0.82	0.78	0.58	0.74	0.83	0.79	0.66	236.9
1982	0.79	1.07	1.00	0.86	0.82	0.79	0.56	0.78	0.84	0.80	0.68	262.5
1983	0.82	1.08	1.01	0.87	0.82	0.84	0.57	0.80	0.87	0.81	0.68	277.6

Table III.5

EXPENDITURES ON PHYSICIANS' SERVICES, PER CAPITA, DEFLATED BY INDICES OF PHYSICIANS' FEES IN CONSTANT FEES OF 1971, CANADA AVERAGE CANADA AND PROVINCES, 1960 to 1982

	1960	1963	1964	1965	1966	1967
Canada	$28.36	$32.09	$33.70	$35.20	$37.69	$38.82
B.C.	$33.52	$35.49	$37.89	$39.56	$44.34	$42.97
Alta.	$26.43	$29.37	$30.78	$32.77	$34.43	$39.20
Sask.	$30.86	$33.51	$41.11	$42.53	$46.18	$47.82
Man.	$33.52	$32.73	$33.81	$37.30	$40.20	$39.50
Ont.	$33.45	$36.05	$41.32	$42.26	$44.47	$46.39
Que.	$21.12	$25.76	$25.62	$27.73	$30.40	$29.67
N.B.	$21.40	$20.04	$24.49	$26.32	$24.21	$26.12
N.S.	$23.91	$22.32	$27.47	$29.41	$32.89	$32.60
P.E.I.	n.a.	$19.50	$20.50	$22.97	$24.22	$26.65
Nfld.	$13.80	$13.20	$16.14	$16.96	$18.36	$19.43

	1968	1969	1970	1971	1972	1973	1974	1975
Canada	$41.96	$44.61	$49.90	$57.91	$62.65	$65.70	$69.00	$73.75
B.C.	$48.08	$51.96	$57.58	$61.79	$65.38	$64.18	$67.88	$69.57
Alta.	$46.23	$48.08	$53.33	$58.39	$63.08	$64.87	$66.18	$70.24
Sask.	$44.48	$44.46	$48.28	$51.30	$56.95	$60.67	$58.04	$59.24
Man.	$36.16	$45.01	$54.47	$55.77	$59.63	$63.23	$61.45	$61.55
Ont.	$51.38	$53.68	$60.75	$65.85	$68.99	$71.69	$75.26	$81.50
Que.	$32.55	$34.69	$35.88	$53.39	$60.96	$65.72	$73.51	$81.51
N.B.	$28.55	$28.86	$31.43	$38.84	$45.04	$46.60	$49.44	$51.25
N.S.	$33.75	$39.17	$48.71	$52.05	$56.01	$55.98	$56.52	$60.82
P.E.I.	$26.87	$32.33	$28.18	$41.75	$41.09	$45.71	$57.56	$47.53
Nfld.	$22.43	$31.71	$35.52	$37.54	$38.16	$41.32	$43.07	$45.41

	1976	1977	1978	1979	1980	1981	1982
Canada	$74.99	$75.09	$77.06	$79.44	$82.81	$83.35	$85.95
B.C.	$72.80	$75.37	$76.59	$79.34	$81.24	$81.57	$85.66
Alta.	$69.01	$68.45	$69.65	$72.46	$72.31	$73.26	$73.18
Sask.	$60.86	$60.74	$63.32	$65.70	$66.82	$68.50	$70.35
Man.	$64.81	$65.77	$67.26	$72.33	$70.72	$71.07	$73.03
Ont.	$81.45	$82.65	$84.85	$87.37	$90.57	$93.56	$97.18
Que.	$85.87	$80.80	$85.74	$87.75	$97.78	$94.43	$100.84
N.B.	$50.27	$49.61	$52.03	$51.58	$53.47	$55.99	$57.29
N.S.	$59.34	$63.15	$62.50	$63.91	$65.63	$67.27	$67.82
P.E.I.	$51.71	$52.98	$54.10	$54.30	$55.46	$58.66	$61.70
Nfld.	$49.22	$50.98	$52.68	$56.93	$58.22	$59.14	$60.18

Table III.6

POPULATION PER ACTIVE CIVILIAN PHYSICIAN
(INCLUDING RESIDENTS AND INTERNS)
CANADA AND PROVINCES, 1960 to 1983

	1960	1962	1965	1968	1969	1970	1971	1972	1973	1974
Canada	879	808	779	740	714	689	659	636	619	605
Nfld	2044	1411	1357	1348	1206	1114	1101	1060	892	828
PEI	1178	1117	1106	1207	1170	1144	1145	1082	1091	1023
N.S.	1071	924	890	776	802	761	733	699	622	619
N.B.	1348	1212	1168	1052	1083	1109	1048	981	962	910
Quebec	875	827	797	707	706	681	639	627	601	581
Ontario	796	741	713	717	669	646	621	589	583	575
Manitoba	844	789	758	730	724	702	645	631	627	620
Sask.	998	926	892	883	840	805	813	795	759	721
Alta.	1007	915	881	775	742	716	690	686	677	660
B.C.	777	686	661	673	650	625	614	592	587	583

	1975	1976	1977	1978	1979	1980	1981	1982	1983
Canada	585	577	566	560	554	547	538	523	512
Nfld	758	718	699	696	687	655	636	610	594
PEI	983	850	855	827	801	805	792	802	831
N.S.	595	593	565	546	537	533	532	524	501
N.B.	909	882	880	878	905	885	855	801	765
Quebec	573	556	544	544	531	527	511	497	489
Ontario	544	545	536	529	524	516	509	499	488
Manitoba	588	579	569	558	556	545	540	510	500
Sask.	702	707	677	675	667	669	660	644	637
Alta.	663	648	649	639	650	647	643	613	597
B.C.	568	556	540	532	526	516	515	499	488

Table III.7

"REAL OUTPUT" PER PHYSICIAN, OR BILLINGS IN CONSTANT FEES OF CANADA, 1971, PER ACTIVE CIVILIAN PHYSICIAN

	1960	1965	1968	1969	1970	1971	1972	1973
Canada	$24,928	$27,417	$31,053	$31,850	$34,383	$38,163	$39,843	$40,665
		1.92%	4.24%	2.56%	7.95%	11.00%	4.40%	2.06%
Nfld	$28,205	$23,011	$30,238	$38,241	$39,573	$41,333	$40,446	$36,853
PEI	n.a.	$25,408	$32,433	$37,828	$32,239	$47,805	$44,462	$49,875
NS	$25,612	$26,174	$26,194	$31,415	$37,067	$38,155	$39,154	$34,818
NB	$28,843	$30,742	$30,037	$31,258	$34,851	$40,702	$44,187	$44,833
Que	$18,483	$22,102	$23,011	$24,490	$24,437	$34,119	$38,219	$39,497
Ont	$26,623	$30,129	$36,840	$35,911	$39,242	$40,892	$40,637	$41,796
Man	$28,293	$28,273	$26,397	$32,586	$38,240	$35,972	$37,627	$39,646
Sask	$30,795	$37,941	$39,274	$37,348	$38,865	$41,705	$45,272	$46,048
Alta	$26,614	$28,871	$35,825	$35,673	$38,181	$40,291	$43,273	$43,917
BC	$26,046	$26,148	$32,360	$33,775	$35,987	$37,939	$38,702	$37,675

	1974	1975	1976	1977	1978	1979	1980	1981	1982
Canada	$41,747	$43,143	$43,271	$42,501	$43,156	$44,009	$45,295	$44,843	$44,951
	2.66%	3.35%	0.30%	-1.78%	1.54%	1.98%	2.92%	-1.00%	0.24%
Nfld	$35,664	$34,418	$35,342	$35,634	$36,668	$39,110	$38,136	$37,611	$36,712
PEI	$58,886	$46,725	$43,953	$45,294	$44,740	$43,496	$44,642	$46,461	$49,484
NS	$34,989	$36,187	$35,187	$35,680	$34,126	$34,318	$34,982	$35,787	$35,539
NB	$44,995	$46,587	$44,338	$43,656	$45,682	$46,680	$47,323	$47,872	$45,887
Que	$42,708	$46,704	$47,744	$43,955	$46,643	$46,594	$51,532	$48,254	$50,116
Ont	$43,274	$44,337	$44,390	$44,301	$44,883	$45,782	$46,736	$47,622	$48,495
Man	$38,099	$36,194	$37,523	$37,423	$37,529	$40,218	$38,543	$38,378	$37,246
Sask	$41,849	$41,588	$43,025	$41,122	$42,741	$43,819	$44,705	$45,209	$45,305
Alta	$43,680	$46,567	$44,720	$44,426	$44,509	$47,099	$46,782	$47,105	$44,860
BC	$39,574	$39,516	$40,476	$40,700	$40,748	$41,731	$41,919	$42,009	$42,746

Table 3-7 corresponds to the "Utilization" lines in Tables 2-1 and 2-2, and is similarly generated as a residual from total expenditure on physicians' services, after the removal of the effects of increases in population, numbers of physicians, and the level of physicians' fees. It thus embodies the effects of any errors in the component series; and one should not, perhaps, place too much confidence in its year-to-year moves. Furthermore, it is based on numbers of Active Civilian Physicians, not all of whom are in private fee-for-service practice, much less in full-time practice, however that might be defined. And as noted above, expenditures on services of physicians includes modes of payment other than fee-for-service, whereas fee schedules apply only to the latter.

Nevertheless the Table 3-7 data represent an approximation to an index of real output per physician, without the monumental task of reconstructing quantity indices from the detailed provincial billing records (which are in any case not public, and for earlier years may not even remain in existence). While the levels of real output per physician reported in Table 3-7 may be (are) very badly downward-biased (as measures of average billings of full-time practitioners weighted by 1971 Canadian average fees) by the considerations above, as an index this series will only be biased if major changes take place in the proportions of Canadian physicians on different payment arrangements or different levels of activity. There is no evidence that this has taken place; fee-for-service payments to physicians vary somewhat from year to year as a proportion of total physicians' services expenditures but the changes are not large.

Tables 3-4 and 3-7, taken together, address the question of trends in real fees, and of physicians' responses to them. At the national level fees have fallen by 20.6% in real purchasing power between 1971 and 1982, while real output per physician has risen by 17.8%. Superficially, then, it appears as if adjustments to utilization per physician have largely offset limitations on fees. Furthermore, the process of utilization expansion is concentrated in the early 1970s. From 1971 to 1975, output per physician rose 13.1% or 3.1% per year on average. From 1975 to 1980 it rose 5.0% or 1.0%, and from 1980 to 1982 it actually fell three-quarters of a percent - 0.38% per year.

These patterns correspond to the main movements in real fees. From 1971 to 1975 real fees fell 17.5% or 4.7% per year, in the next five years they fell only 5.1% or 1.0% per year, and from 1980 to 1982 they rose 1.4% or 0.7% per year. One could therefore characterize the post-1971 period as an initial stage of rapidly falling real fees, associated with rapidly rising real output per physician (which was not, however, rapid enough to offset all the fee drop), followed by a period of much slower decline in fees and matching rise in output per physician, and the most recent period of small rises in real fees and again matching falls in real output per physician. At this level of generality, the ineffectiveness of limitations on fees seems to be confirmed.

The province-specific data yield further confirming observations, but also some aberrant results. The outlier provinces in terms of the evolution of per capita costs, B.C. and Quebec, are also outliers in terms of real fees. The average level of physicians' fees in B.C. rose

179.9% from 1971 to 1982, 5.7% more rapidly than the Consumer Price Index. In no other province did physicians outpace the general inflation level, although Alberta matched it almost exactly. In 1971 B.C. fees were almost exactly at the national average, by 1982 they were 34.4% above. In Quebec, on the other hand, fees in real terms nosedived, falling 44.0% to reach 70.8% of the Canadian average in 1982. The two provinces had almost identical average fee levels in 1971; eleven years later Quebec's fees were about half those in B.C. -52.7%.

In response to this massive change in relative fees, one might expect some quantity response. And indeed there is one - but it is not massive. Output per physician in Quebec rises from 89.4% of the Canadian average in 1971 to 108.0%, a total increase of 42.3%, of which 36.9% occurs in the first four years. (In Chapter 4 below we explore in more detail this rather remarkable Quebec experience of the early 1970s. In B.C. on the other hand, output per physician moves down from 99.4% of the Canadian average to 95.1%, for a total increase of 12.7%, spread more or less evenly over the 1971-82 period. Putting this change together with the change in real fees implies an increase of (1.057)(1.127) = 1.191 or 19.1% in inflation-adjusted gross expenditures per B.C. physician, compared with a fall of (0.56)(1.42) = 0.80 or 20% per Quebec physician (active civilian physicians, not full-time fee-for-service physicians, in each case).

Quebec and B.C., therefore, present experience consistent with the hypothesis that increases in output per physician correlate negatively with changes in real fees, but that utilization cannot be manipulated flexibly enough to compensate for very large drops in fees. But the evidence from other provinces is much less clear. In three provinces, Manitoba, Nova Scotia, and Newfoundland, output per physician is stagnant or actually drops from 1971 to 1982. Yet in these provinces, real fees fell in line with the Canadian average (Manitoba, Newfoundland), or about 10% less than the average (Nova Scotia). On a cross-sectional basis, two of these provinces had real fee levels which were about 5% or less above the Canadian average in 1982, while Newfoundland was well below average. Yet all three are about 20% below average in physician output. And in two, the gap has developed since 1971.

In Ontario, physicians had in 1982 an output index equal to that of those in Quebec, 7.9% above the national average. Yet their fees were above the national average in that year. Real fees in Ontario fell by very slightly more than the national average, 1971 to 1982, and real outputs, initially above average, rose by almost the same rate as that average. Thus Ontario physicians experienced a fall of 21.8% in real fees, of which 19.0% was in the first four years. Their real outputs rose by 8.4% in that same period, then rose another 9.4% over the next seven years, finishing 18.6% higher, but not recouping all the losses from the fall in fees.

Alberta, another province with relatively rapid fee increases, had a slower than average increase in real output per physician, starting the period above average and finishing on the average. Moreover the Alberta output increase is all concentrated in the first four years, during which time real fees in Alberta fell by 16.7%. Alberta 's pattern thus resembles Quebec's, a very sharp fall in real fees from 1971 to 1975 accompanied by an increase in real outputs per physician, but with the difference that in Alberta the increase in output - 15.5% - was almost enough to match the decrease in real fees. Their product fell by only 3.2%. Both the rise in outputs and the fall in fees were much less in Alberta, but still quite impressive in a four year period.

After 1975, however, Alberta output per physician shows a rather irregular pattern which raises some questions about the year -to-year reliability of the data. Real fees rose by 12.6%, recouping much of the early 1970s drop, but real output fell 3.4% over the period. This is particularly striking in that Alberta had both a relatively low stock of physicians per capita in 1975, 11.8% below the national average, and relatively slow growth of supply from 1975 to 1982, 8.2% compared with a national average of 11.9%. (Growth in absolute numbers of physicians in Alberta was actually quite rapid during this period, but the oil boom was bringing in population equally rapidly - from 1976 to 1981 the physician/population ratio in Alberta rose only 0.8% while the national average rose 7.2%.) Thus the relatively slow growth in output per Alberta physician after 1975 cannot be explained by market saturation, and the alternative explanation of response to relatively rapid fee increase seems plausible.

Saskatchewan has a fee pattern somewhat similar to Alberta's, although its fee level in 1971 was 17.3% lower. Real fees in Saskatchewan fell 10.8% from 1971 to 1975, then recovered by 9.3% from 1975 to 1982. But real output per physician rose not at all in Saskatchewan from 1971 to 1975. The increases were in the latter part of the 1970s - 8.9% from 1975 to 1982 - during the time that real fees were actually recovering. Of course Saskatchewan had had a universal medical insurance system in place since 1962, so that the Saskatchewan plan was in a more mature stage in the early 1970s than were the plans in the other provinces. But the contrasting Saskatchewan and Alberta experiences show that there is no mechanical relationship between falling real fees and rising output per physician.

In New Brunswick, there is some suggestion of the Alberta pattern. New Brunswick was the last province to set up a plan - on January 1, 1971, and had at that time relatively low fee levels and numbers of physicians per capita (5.9% below average on fees and 37.1% below on physicians). Fees fell, in real terms, by 18.5% from 1971 to 1975, but the index of real output per physician rose 14.4%. From 1975 to 1982, however, the output index fluctuates in a narrow range to end the period 1.5% below its 1975 value. Real fees, on the other hand, rose 1.6% over the same period. And the drop in output and rise in real fees is concentrated in the 1981 to 1982 period, as it is in Alberta.

The provinces then seem to divide into three distinct groups in terms of their real fee experience between 1971 and 1982. Four provinces, B.C. Alberta, Saskatchewan, and Nova Scotia, finish the period within about 5% of their starting level. B.C. is up 5.7%, Alberta down 6.1%, and the other two down 2.5% and 4.0% respectively. The second group of provinces, Manitoba, Ontario, New Brunswick, Prince Edward Island, and Newfoundland, experienced real fee decreases in the neighbourhood of 20%, ranging from New Brunswick's 17.2% to Ontario's

21.2%. And finally Quebec forms a "group" in itself, with a real drop of 44.0%.

But the changes in output per physician in the different provinces do not show the same pattern. Quebec has by far the largest increase - 42.3% - and the second largest increase - 18.6% - is in Ontario which had the second largest fall in real fees. (These two provinces between them account for about 60% of the Canadian population.) But the next group of provinces, with increases of between 8.6% and 12.6%, comprises B.C., Alberta, Saskatchewan, and New Brunswick, three of whom are in the group with the highest increases in real fees. Manitoba and P.E.I., with drops of nearly 20% in real fees, had output index increases of 3.0% and 3.3%, while in Nova Scotia and Newfoundland output actually dropped, despite a real fee decrease of 18.0% in the latter.

Looked at another way, if we ask by how much the product of real fees and real output per active civilian physician changed over this period, we find a group of three provinces in which this product actually rose. In B.C. it was up 19.3%, and in Alberta and Saskatchewan 4.7% and 5.9%. These are, of course, three of the four provinces with the least decrease (in B.C. an increase) in real fees. The five provinces with fee decreases near 20% form a mixed bag, with decreases in the fee-output product of from 6.6% to 27.5%. In Ontario and New Brunswick increases in output held the overall drop to 6.6% and 6.7%, in Manitoba and P.E.I. very small increases in output resulted in "billing" drops of 16.8% and 16.1%, and in Newfoundland, drops in both real fees and real output led to a fall of 27.5% in the total. This exceeded even the fall in Quebec, where the rapid increase in output per physician in the early 1970s held the total drop to 20.4%. Nova Scotia, like Newfoundland, is an anomaly in that real output and real fees both drop, though by much less in each case.

On balance, then, a survey of provincial fee and expenditure experiences after 1971 turns up a number of examples of drops in inflation-adjusted fees being buffered by corresponding increases in servicing activity per physician, and a few examples of fee increases associated with reduced activity. Where the pressure on fees since 1971 has been most intense (Quebec), the quantity response has been most pronounced. Furthermore, there is a correspondence in timing between the downward pressure on fees and the quantity response. But there is no automatic or mechanical negative relationship between physicians' fee levels or changes and the level of servicing activity. The provinces with the most rapid fee increases since 1971 are in the mid-range in terms of quantity response, for example, and there are provinces where both real fees and output per physician seem to have fallen together. In some cases there is a suggestion that the response may have lagged the change in fees by a year or two.

But perhaps more important, is the fact that the quantity changes do not appear, in general, to be equal to the fee changes. As noted above if for each province one multiplies together the changes in real fees and in output per physician, over the period 1971 to 1982, the product increases in only three provinces; and its increase is much the largest in the one province - B.C. - where real fees actually rose. The changes in this product tend to correlate with the changes in real fees. The quantity responses mitigate the effects of fee changes, but are not strong enough to negate them. Differences in the tightness of fee bargaining do in fact translate into differences in the dollar value of billings per physician - holding down fees does contribute to holding down costs.

Furthermore, the diversity of provincial experience highlights the extent to which Quebec is, as in so many areas, "not a province like the others". It stands out from the rest in the size of both its fall in real fees and its quantity response, over 40% in each case. But this quantity response was primarily a feature of the 1971 to 1975 period; from 1975 to 1982 physicians' fees in Quebec fell by 23.5% in real terms, but output per physician rose only 3.9% in response. It would appear that the period immediately after the introduction of Medicare may have been as unusual in the Quebec experience as Quebec has been unusual in Canada. In the next chapter, a more detailed analysis of the Quebec data which reports the relative frequency of different billing items shows clearly that the mid-1970s was a turning-point in that program's experience.

Yet ironically it is the early 1970s experience in Quebec which has been most thoroughly reported in the U.S., partly as a result of a major research project sponsored by the U.S. Department of Health, Education, and Welfare, and conducted by Mathematica, Inc. of Princeton (Berry et al., 1978). The logic of the study was reasonable, to examine utilization patterns in a province with a relatively low level of prior insurance coverage after introduction of a universal, comprehensive plan. But in retrospect it appears that the result may have been to give U.S. researchers an impression of Canadian experience which was based on the most unrepresentative time period in the most unrepresentative province in the country.

In particular that experience served to reinforce the impression from U.S. experience, that attempts to control costs of physicians' services through direct controls on fees were doomed to failure because physicians could always respond to fee controls by manipulating either the amount or the classification of their activity. Yet the overall message of the Canadian experience is that such control is indeed possible. The quantity response, while not trivial, is insufficient to offset fee controls. Our examination of experiences in individual provinces (in subsequent chapters) indicates that this response is also controllable through the process of fee schedule bargaining. Such bargaining concerns not only the level of fees, but also the structure of the schedule, and thus permits reimbursers to close, or at least restrict, the channels through which activity expansion occurs.

U.S.-Canadian Comparisons, 1960 to 1982

Yet the impression held by U.S. analysts is not groundless, in terms of their own experience, as emerges from a comparison of the U.S. and the Canadian data over the same time periods. Tables 3-8 to 3-10 present data for selected years from 1960 to 1982, for Canada and the United States. Table 3-8 reports indices of output per physician and of inflation-adjusted fees, for both countries. In the U.S., however, the rate of price change reported by the All-Items C.P.I. differs markedly from that reflected in the implicit price deflator for the whole of

Table 3-8

Indices of Output per Physician and of Inflation-Adjusted Fees,
Canada and the United States, 1960 to 1982, Selected Years

Year	Real Output		Real Fees		
	Canada	United States	Canada	United States	
				(a)	(b)
1960	65.32	80.13	94.08	81.12	82.98
1965	71.84	93.60	97.76	87.32	87.78
1970	90.10	102.87	100.62	97.55	98.24
1971	100.00	100.00	100.00	100.00	100.00
1975	113.05	108.33	82.45	98.21	99.67
1980	118.69	107.87	78.25	101.89	111.64
1982	117.79	110.15	79.35	105.92	116.93

U.S. Real Fee series (a) divides the Physicians' Fees component of the C.P.I. by the All-Items C.P.I., series (b) divides by the G.N.E. deflator. The Canadian series uses the All-Items C.P.I., but for Canada this index does not differ substantially from the G.N.E. deflator.

Table 3-9

Percentage Changes in Real Output per Physician and in Inflation-Adjusted Fees, Canada and the United States, Selected Time Periods

Years	Real Output		Real Fees		
	Canada	United States	Canada	United States (a)	United States (b)
1960-82	80.32%	37.46%	-15.66%	30.57%	40.91%
1960-71	53.09%	24.79%	6.29%	23.27%	20.51%
1971-82	17.79%	10.15%	-20.65%	5.92%	16.93%
1960-65	9.98%	16.80%	3.91%	7.64%	5.78%
1965-70	25.41%	9.91%	2.92%	11.72%	11.92%
1970-71	10.99%	-2.79%	-0.62%	2.51%	1.79%
1971-75	13.05%	8.33%	-17.55%	-1.79%	-0.33%
1975-80	4.99%	-0.42%	-5.09%	3.75%	12.01%
1980-82	-0.76%	2.11%	1.41%	3.96%	4.76%

(a), (b), see Table 3-8.

Table 3-10

Percentage Changes in "Real Billings", or Inflation-Adjusted Fees Multiplied by Real Output, per Physician, Canada and the United States, Selected Years

Years	Canada	United States (a)	United States (b)	Canada/United States (a)	Canada/United States (b)
1960-82	52.08%	79.48%	93.69%	-15.26%	-21.48%
1960-71	62.72%	53.83%	50.38%	5.78%	8.20%
1971-82	-6.53%	16.67%	28.80%	-19.88%	-27.43%
1960-65	14.28%	25.72%	23.55%	-9.10%	-7.50%
1965-70	29.07%	22.79%	23.01%	5.12%	4.92%
1970-71	10.30%	-0.35%	-1.05%	10.69%	11.47%
1971-75	-6.79%	6.39%	7.97%	-12.39%	-13.67%
1975-80	-0.35%	3.31%	11.54%	-3.55%	-10.66%
1980-82	0.64%	6.15%	6.94%	-5.19%	-5.89%

(a), (b), see Table 3-8.

Gross National Expenditure, especially in the late 1970s when inflation was relatively rapid. Some U.S. analysts feel that the C.P.I. overstates the general rate of inflation in this period. If so, then the relative inflation of physicians' fees is still more rapid, as shown by column (b) in Table 3-8. The Canadian indices do not show this marked divergence, thus only one series is reported.

In Table 3-9 the percentage changes in the indices in Table 3-8 are calculated for particular time periods of interest in the overall span. The differences between Canada and the U.S. over this period are very large. But the first row of the table is clearly consistent with the view that controls on fees induce an offsetting quantity response. In Canada, inflation-adjusted fees fell by about 15% over the period as a whole, while in the U.S. they rose relative to the general price level by either 30%, if one measures general inflation by the C.P.I., or 40% if one uses the G.N.E. deflator as a base. Either way, the relative inflation in the medical sector is quite apparent; in relative terms fees in Canada fell behind those in the U.S. by 35% - 40%. But at the same time, apparent real output per physician in Canada was rising twice as fast as it was in the U.S.

To some extent this pattern is an artifact of the way in which the Canadian fee index has been constructed; as emphasized above the increase in fees actually collected in Canada during the 1960s and particularly during 1965-71 was substantially greater than is shown in the index of fee schedules. Thus the increase in effective Canadian fees is understated during the 1960s, and the increase in output is correspondingly overstated. Still, one would expect the spread of private insurance in the U.S., as well as the introduction of the U.S. version of Medicare and of Medicaid in mid decade to have introduced similar, though less abrupt, biases in the U.S. data.

The data in Table 3-10, however, cancel out these biases, and show that the Canadian quantity increase, while sufficient to absorb the decline in the real value of official fee schedules and still leave a substantial increase in inflation-adjusted billings per physician, still left the Canadian physician 15% to 20% behind his/her U.S. counterpart. In very general terms, this discrepancy indicates the extent to which fee control limited expenditures, over and above the countervailing effects of quantity increase.

But there is more information in the sub-periods. In the first half of the period, from 1960 to 1971, the Canadian provinces were at different times introducing their public insurance programs. Apparent output per physician was rising rapidly, again at twice the U.S. rate. Inflation-adjusted fees were also rising, even according to the official schedules promulgated by the medical associations. But they were rising much less rapidly than in the U.S., so much less that despite the huge apparent quantity increases Canadian physicians actually gained only 6% - 8% relative to those in the U.S. in this eleven year period. If the U.S. experience is indicative of what might have happened in Canada had the universal plans not been introduced, this suggests that rapid quantity increase and relative fee inflation, in some combination, would have occurred in any case, and the net cost of the introduction of the public plans was remarkably small. (If the U.S. experience is interpreted as in part a response to the introduction of U.S. Medicare and Medicaid, and it is assumed that such partial plans represented the alternative for Canada - Brand X - then the net cost of universality and comprehensiveness is still remarkably small - even before the subsequent process of cost control began.)

In the latter half of the period, however, from 1971 to 1982, Canadian physicians' fees dropped hard relative both to those in the U.S. and to the general price level. The drop of one fifth in real purchasing power represents a fall of one quarter to one third when compared to the behaviour of fees in the U.S. It is in this period that the discrepancy between the different U.S. price indices becomes important; and if indeed the U.S. C.P.I. overstates the general inflation rate, then the drop of one third is the better indication of the relative constraint placed on Canadian physicians' fees. In this period, as well, the Canadian fee data are no longer subject to the biases surrounding the introduction of Medicare. They are based on the changes in fee schedules which determine what physicians are actually reimbursed for their services.

In this period, again, output per physician in Canada outruns that in the U.S., but by a relatively small amount - just under 7% over eleven years. The increase in output per physician is not enough to keep total billings from falling in real purchasing power, though only by 6.53%. But relative to the U.S. experience, they fall by at least 20% and perhaps closer to 30%. Again, assuming that the U.S. pattern is a better measure of what might have happened in Canada in the absence of the public plans than is the assumption of unchanging inflation-adjusted billings, these discrepancies of 20% and 30% are the appropriate measures of the effect of fee schedule negotiation on overall costs. Fees fell in real purchasing power, but they would otherwise have risen. And although it is true that much of this fall was offset by the quantity response, the U.S. experience suggests that much of this increase in quantity would have occurred in any case. Relative to the U.S. baseline, therefore, the Impact of Canadian fee control is very significant.

An examination of the shorter time periods within the pre-and post-1971 years suggests additional hypotheses. The early 1970s are of particular interest, as real fees drop both in Canada and in the U.S. The very sharp drop in Canada is the result of the fee schedule negotiation process limiting the escalation of fees in nominal terms, while the escalation of general price levels pushed down the real value of fees in a way which was unexpected by payers and recipients alike. But, remarkably, physicians' fees fell behind inflation in the U.S. as well, in the absence of a public insurance program.

The explanation is, presumably, the U.S. Economic Stabilization Program, initiated on August 15, 1971 (United States, Department of Health, Education, and Welfare, (1973)). That program particularly targetted prices in the health sector, and appears to have had significant effects on those prices. But the ESP did not push fees down to any great degree, it merely suspended (temporarily) their historical trend pattern of outrunning the inflation rate. The relatively rapid escalation of medical fees (about 2.3% per year faster than the G.N.E.

deflator, on average) is reestablished in the 1975 to 1980 period. This average rate also holds from 1965 to 1970 and 1980 to 1982, highlighting the unusual nature of the early 1970s.

However, as shown in Tables 3-9 and 3-10, fee control did not, in the U.S., translate into cost control. Between 1971 and 1975, output per physician in the U.S. rose just over 2% per year on average, pushing inflation-adjusted billings per physician up by about 6% - 8% (depending on ones' preferred index of inflation). The quantity response overwhelmed the effect of fee control.

Of course, as emphasized earlier, a steady updrift in apparent output per physician is a normal part of the historical experience. Granted that flat or falling real fees did not translate into flat expenditure, did they at least reduce the rate of escalation? In this context it is relevant that the rate of growth of output per physician in the U.S. was just over 2% between 1971 and 1975, over the remaining 18 years in the period it averaged about 1.3% per year, suggestive of more rapid than usual quantity response. On the other hand, the total increase in real billings per physician from 1971 to 1975 (Table 3-10) was much slower than from 1960 to 1971, and about the same as from 1975 to 1982.

The 1960s in the U.S. were clearly the boom years in terms of both real fees and real output; and the 1970s marked the beginning of slower, though still not negligible growth. After the ESP experience, when real fees were held down and outputs rose to compensate, the subsequent years have seen relative fees return to their inflationary pattern while output growth has slowed. Total costs per physician, however, continue to climb, one way or another. One can understand the disenchantment with fee control.

But the Canadian picture is quite different. In Canada in the early 1970s, real fees were not merely held, but blitzed, dropping by over 4% per year. Quantity per physician rose fast, but not fast enough to compensate, and as Table 3-10 shows, real expenditure per physician fell back while in the U.S. it was rising. Clearly in Canada fee control worked, because it was carried out much more stringently than in the U.S., and particularly because it was carried out, not by trying to freeze a set of diverse "UCR" rates, but by the direct negotiation of uniform fee schedules. Under these circumstances, the avenues of quantity response can be identified through on-going experience and closed off through the negotiation process.

From this point of view, the years after 1975 take on particular importance. One could argue that in the early 1970s, public reimbursers in Canada were lucky. They were dealing with complacent medical associations whose members were digesting the very large income gains of the 1960s, and in any case were not yet geared up for or experienced in negotiation. And they were greatly aided by the time lags in negotiation and application of fee schedules, in an atmosphere of unforecast escalating inflation. There is certainly some truth in this argument.

But after 1975, when the negotiation process could be thought of as well established and understood by both sides, one finds a continued, although much slower, fall in real fees down to 1980, followed by a rise to 1982. There were offsetting moves in output per physician, such that their product is virtually unchanged from 1975 to 1982. By contrast, the corresponding product in the U.S. rises by about 20% over this period (if one uses the G.N.E. deflator to measure inflation, otherwise the increase is only 10%). This represents a differential of about 2.5% per year, between the flat Canadian pattern and the continuing U.S. escalation. In neither country is there any major change in insurance coverage or regulatory process over this period, suggesting that 2.5% per year may in fact measure the continuing impact of fee regulation in Canada. If so, the effect is not small.

This line of argument rests upon the implicit assumption that in the absence of specific policy interventions on either side of the border, the process of medical fee setting and the evolution of practice patterns would have proceeded more or less in parallel. There is, of course, no way that the validity of such a counter-factual can be "proven", or for that matter, "disproven". But its plausibility rests on two types of observation.

First, as noted in Chapter 1, the organization of medical practice both in and out of hospitals has historically been very similar in Canada and in the United States. Independent private fee-for-service practice has been and remains the dominant mode, with a mix of solo and group practice which varies geographically and by specialty. There is a good deal more variety in practice organization in the U.S. than in Canada, but this has always been true. Most hospital care in both countries is provided by private practitioners with admitting privileges. Only with the rapid development of for-profit hospital organization in the U.S. in the last five years, and with its consequent impact on the organization of medical practice, have the two countries begun to diverge significantly in the organization of medical care delivery, as opposed to reimbursement.

But second, it is possible to examine at least in rough outline the cost performance prior to the innovations in reimbursement in both countries during the 1960s. Between 1950 and 1960, for example, the Physicians' Fees component of the Canadian Consumer Price Index rose at an annual average rate of 3.6%, compared to the All-Items Index rate of 2.2%. The corresponding U.S. figures are 3.4% and 2.1%. Thus during that decade, before public medical insurance in Canada, or Medicare/Medicaid in the U.S., and with public hospital insurance coming in just at the end of the decade in Canada, medical fees did rise in parallel - 1.4% relative inflation in Canada and 1.3% in the U.S. This pattern carried on in the U.S. in the early 1960s; from 1960 to 1965 medical fees gained an average of 1.1% per year relative to the G.N.E deflator and 1.5% relative to the C.P.I. (Canadian data are from Barer and Evans, (1983); U.S. from United States, Health, Education and Welfare, (1973)).

At the same time, apparent output per physician was also rising in parallel. Total expenditures on physicians' services, divided by numbers of physicians and then by an index of fees, rose at an average annual rate of 2.4% in Canada from 1950 to 1960, and 2.3% in the U.S. This apparent output measure speeded up markedly during that decade; the Canadian rates are only 0.6% per year from 1950 to 1955, and increase to

4.2% from 1955 to 1960. The corresponding U.S. rates are 0.9% and 3.8% - again a close parallel, suggesting similarity of the underlying market and non-market forces at work.

In Canada, however, the price trend was flattening out a bit. In the late 1950s it averaged only 1.3% above the inflation rate, compared to 1.4% from 1950 to 1955, and from 1960 to 1965 it was down to an annual average of only 0.8% above the inflation rate. It may be that fees in Canada were, for reasons unexplained, already beginning to drop behind those in the U.S. in the late 1950s and early 1960s.

An alternative explanation, however, may be that the forms of public insurance introduced in the two countries created different opportunities for price and quantity adjustments. The U.S. Medicare program, paying "UCR" rates, was an open invitation to price escalation; and it appears that, except for the ESP period in the early 1970s, U.S. physicians have achieved more rapid relative escalation in their fees since 1965, averaging close to 2% per year increases in inflation-adjusted fees compared to the rates of about 1.3% prevalent from 1950 to 1965.

In Canada, on the other hand, the introduction of public insurance coincided with a one-time jump in de facto fees which shows up in the data as an increase in apparent output. The adoption by the public plans of pre-existing fee schedules made overt fee escalation more difficult, and encouraged instead the further adjustment of outputs, insofar as possible within the constraints of the bargaining process.[1]

This does not, however, explain the relative quiescence of both fees and outputs during the early 1960s in Canada. From 1960 to 1965, Canadian fees grew much less rapidly than those in the U.S., and apparent output per physician did likewise. Real billings per physician fell behind those in the U.S. by 7.5% or nearly 10%, depending on the U.S. inflation index used.

A speculative interpretation might be that during precisely that period, the Royal Commission on Health Services was conducting its hearings and deliberations, and the Canadian medical associations were arguing that a system of predominantly private insurance, controlled by themselves, with public supplementary coverage for the aged or otherwise uninsurable, was preferable to the universal comprehensive public model which was in the end recommended and adopted. In the middle of this period (1962) Saskatchewan adopted the universal, comprehensive model to which physicians and private insurers were most opposed. The resulting "Doctors' Strike" and its aftermath, received widespread attention, even outside Canada. It may be that this was regarded, by the various provincial associations, as a very impolitic time to be promulgating large fee increases. It must be recalled that, well before Medicare, almost all provincial associations issued schedules of "minimum" fees as guides to their members. The level of such fees was thus much more open to public view and discussion than in the decentralized U.S. system; even though the "guides" were not binding they nevertheless had potential political significance.

On balance, then, the experience of the 1950s and early 1960s seems consistent with the view that prior to the introduction of public insurance - and the shadow it cast before - the pattern of evolution of physicians' fees and fee-adjusted billings was very similar in Canada and in the United States. If this is so, then the divergence since 1971 can be attributed to the process of fee schedule negotiation, both level and structure, in Canada. The result has been a substantially lower rate of increase of fees, relative to general inflation rates. And while outputs per physician have increased faster in Canada, they have not been nearly sufficient to compensate.

Moreover the process of negotiation of schedule structure, not merely fee levels, appears progressively to have eroded the ability of physicians to expand output on a given fee schedule. This process of tightening provincial control shows up particularly dramatically in Quebec, which is also the province in which, during the early 1970s, the experience of frozen fees and offsetting quantity response was most apparent. In the next chapter we examine that experience in more detail.

FOOTNOTES - CHAPTER 3

1. An explanation of differences in fee escalation which might spring to mind, but which will not in fact bear much weight, is differences in levels of practice expenses. Our discussion has focussed on physician gross revenues; but if expenses of practice were rising more rapidly in the U.S., physicians there might have had to raise their fees faster to maintain parallel patterns of net income growth.

   Freeland and Schendler (1984) report expenses of practice data for U.S. physicians in 1972 and 1982, and these are compared with corresponding Canadian data in Barer and Evans (1985). U.S. physicians do appear to have higher rates of overhead; Freeland and Schendler report 39.9% of gross income going to expenses in 1972, rising to 44.1% in 1982. Corresponding Canadian figures are 32.6% and 37.0%. Yet when one measures the increase in overhead expenses, actual dollars, adjusted for changes in the Consumer Price Index (Barer and Evans, 1985, Table 18), it is the same in both countries. And as a percent of gross receipts, expenses actually rose somewhat faster in Canada - 13.5% against 10.5%.

   This is somewhat surprising in view of the common argument in the U.S. that malpractice insurance premiums are driving up physicians' fees. Such premiums are part of expenses of practice; and the "malpractice crisis" has no Canadian counterpart (for a variety of reasons, both socio-psychological and legal/structural). So why have U.S. physicians' overhead costs not risen faster than those in Canada? We do not know.

Chapter 3 Data Sources

Tables 3-1 and 3-2 are calculated from total expenditures on physicians' services, Canada and provinces, as reported in Canada, Health and Welfare Canada, (1984a), Tables 2 and 20-29, for 1976 to 1982, and Canada, Health and Welfare Canada, (1979), Tables 18.1-18.32, for 1960 to 1975. Population and G.N.P. data used in the table denominators are drawn from Tables 19.1 and 19.2 of Canada, op. cit. (1979) for 1960 to 1975. From 1976 to 1982, population data were drawn from Canada, Statistics Canada, (1985), and G.N.P. data from Canada, Statistics Canada, (1983).

Table 3-3, the indices of physicians' fees by province from 1960 to 1983, is assembled from several sources. The Canada series was originally developed and described in Barer and Evans (1983). For 1971 and subsequent years, the Health Information Division of Health and Welfare Canada has prepared (unpublished) indices of the fee schedules in each province governing reimbursement of physicians by the provincial insurance plans, on a basis of 1971 = 100.0 in 1971. The national index is a weighted average of these provincial indices, with provincial weights that are adjusted through time to reflect changes in the relative contributions of the different provinces to the total.

Fee schedules change at a particular point in time, usually within a year. The Health and Welfare index represents the average over the year of fee schedules in force in a province during that year, weighted according to the proportion of time they were in force. The source for Table 3-3 is Canada, Health and Welfare Canada (1982) with updated information provided by officials of Health and Welfare Canada. The most recent release is Canada, Health and Welfare Canada (1984c).

This index forms the core of Table 3-3, with the modification that the base value in 1971 for each province has been adjusted to reflect the level of that province's fees relative to the national average. Health and Welfare currently does not release the data in this form. But in the late 1960's and early 1970's, the Health Research Division of the Department of National Health and Welfare released (unpublished) comparisons of provincial fee schedules on a more or less annual basis, showing each province's schedule relative to that of Ontario. A release by what was then the Health Economics and Statistics Division, in January 1975, gives these relatives for December 31st. of 1970 and 1971, as well as the amounts and (in other sources) dates of schedule revisions during 1971. These, and provincial weights for 1972/73 used by Health and Welfare in constructing the post-1971 index, were used to calculate a national average index for 1971 against which each province's overall fee level could be compared in that year. These relatives were then used to re-base the post-1971 indices so that each province's fee level could be shown relative to the national average for 1971, which is set equal to 100.0.

For provinces which entered Medicare prior to 1971, the periodic percentage changes in fee benefit reimbursement schedules reported by Health and Welfare Canada could be used to compute appropriate changes in the index of fees in effect in each province, back to the date of entry to Medicare. Prior to that time, Health and Welfare compiled estimates of the overall percentage change in fees represented by the periodic revisions in fee schedules issued by the provincial medical associations, and these are reported in unpublished releases. They can be used to carry each province's fee index back to December of 1963, and are so used here, although it must be kept clearly in mind that these were only guides to practitioners prior to Medicare. They were used as a basis for reimbursement by service benefit private insurance programs, but were not binding, and physicians may have made concessions from them either deliberately (differential billing) or unintentionally (uncollectible accounts).

For 1960, however, no such index exists. But at that time, data on physicians' fees were collected as a component of the Consumer Price Index. Unpublished data was available from Statistics Canada for the major cities in each province, for April and October of each year, showing the value of this physicians' fees index as reported by practitioners surveyed by the Dominion Bureau of Statistics. A (population) weighted average of the index for the cities available in each province, for 1964 and 1960, was used to carry the fee schedule based index back to 1960. The 1963 value was not used, because this refers only to December of that year, and it was not known whether there were revisions to the fee guide in some provinces during that year. Since no city from Prince Edward Island was included in the CPI survey in those days, a 1960 index for that province could not be computed.

Quebec also represented a special case, as no fee guide was issued for all of Quebec physicians prior to Medicare. The Quebec index in Table 3-3 from 1960 to 1968 is therefore the Consumer Price Index, physicians' fees component, for the city of Montreal. This specific index was not available after 1968, but for 1969 and 1970 the provinces which had already entered Medicare had been dropped from the CPI so that the national CPI physicians' fees component was almost entirely a reflection of Quebec fees. Accordingly this component (as reported in Canada, Statistics Canada, Prices and Price Indices, Vol. 47, no. 12, p.50, and Vol. 48, no.12, p.51) was used to form the bridge from 1968 to 1970, and fees in Quebec are assumed not to have changed during 1970. (Of course fees collected may well have risen sharply, as they appear to have done in several other provinces on the introduction of Medicare.)

Annual values of the Canadian Consumer Price Index are reported in Leacy (ed.) (1983), Series K8, down to 1975. Subsequent values are drawn from various issues of the Canadian Statistical Review (Canada, Statistics Canada, monthly).

Parenthetically, it should be noted that despite the potential inadequacies of the fee indices based on provincial fee guides prior to Medicare, they appear to parallel the CPI physicians' services component quite closely. From 1964 to 1968, both rose by 19.4%, although the latter includes Quebec and the former (since Quebec did not have a province-wide schedule) does not. There was, of course, some variation in individual years. From 1964 to 1970, the CPI component rises 29.1% and the fee schedule index 27.9%, but after 1968 as noted above the CPI component was almost entirely Quebec, and the fee index was based on the other nine provinces, so there would be no reason for their values to coincide.

Tables 3-4 and 3-5 are then based on the fee data from Table 3-3. In Table 3-4, the fee indices are divided through by the national Consumer Price Index also reported in Table 3-3 to yield a measure of "real" or constant purchasing power fees. In Table 3-5, the fee indices from Table 3-3 are divided into the per capita physician expenditure data from Table 3-1 to yield estimates of "real" or constant fee measures of per capita utilization. Since the fee schedules in Table 3-3 have been adjusted to a common base, the utilization data in Table 3-5 can be compared across provinces.

Table 3-6 presents physician-to-population ratios for Canada and provinces, drawn from Canada, Health and Welfare Canada, (1984b), Table 21.2 for 1972 to 1982, and from Canada, Health and Welfare Canada, (1980), Table 21.2, for 1968 to 1971. Unpublished data for 1983 were supplied by Health and Welfare Canada. Data by province for 1962 and 1965 are reported in Canada, Department of National Health and Welfare, (1967), but the corresponding national values do not match later reports for the same years. Accordingly national population/physician ratios for these years were drawn from Leacy (ed.) (1983), Series B83, and the provincial values were estimated by applying the provincial values relative to the national from the 1967 publication to the national values from the 1983 publication.

For 1960, the national total of active civilian physicians was taken from Judek (1964), Table 2-2, and then allocated across provinces using the proportions implicit in Judek's Table 2-3. That Table reports province-specific data only for census years, but the provincial relatives for June 1, 1961 were used with the national data for December 31, 1960, in confidence that five months were unlikely to change the provincial relative standings significantly.

Table 3-7 combines data from Tables 3-5 and 3-6 to estimate indices of "real" output per physician, or comparative "productivity". The cell entries by province and year in Table 3-5, constant-fee billings per capita, are multiplied by the corresponding entries in Table 3-6, population per physician, to yield constant-fee billings per physician. As noted in the text, the measure of physicians is all Active Civilian Physicians, whether or not in fee-for-service practice, so that the numerator and denominator in this ratio are not strictly comparable. But for comparative purposes across years and provinces, this is unlikely to create significant biases.

Tables 3-8 to 3-10 form a single block, in which the latter two are simply calculated from the data in Table 3-8. The Canadian data on "real fees" and "real output per physician" in Table 3-8 are drawn from Tables 3-4 and 3-7 respectively. The corresponding U.S. series on "real output per physician" was derived by dividing total expenditure on physicians' services by the physicians' fees component of the Consumer Price Index (adjusted to 1971 = 100.0), and then by the total number of U.S. M.D.s and D.O.s. Expenditure data are from Gibson, Levit, Lazenby, and Waldo, (1984); numbers of M.D.s and D.O.s are from Freeland and Schendler, (1984), Table 4, with the 1971 value added from United States, DHHS, (1984), Table 60; and the physicians' fees component of the C.P.I. is drawn from United States, B.L.S., (1972), Table 127, for

1960, 1965, 1970, and 1971, and from United States, Department of Commerce, *Statistical Abstract of the United States, 1985*, Table 791. Estimates of "Real Fees" are derived from the physicians' fees component, divided by the All-Items C.P.I., and by the Gross National Expenditure deflator, both drawn from Freeland and Schendler, (1984), Table 1.

Chapter 4

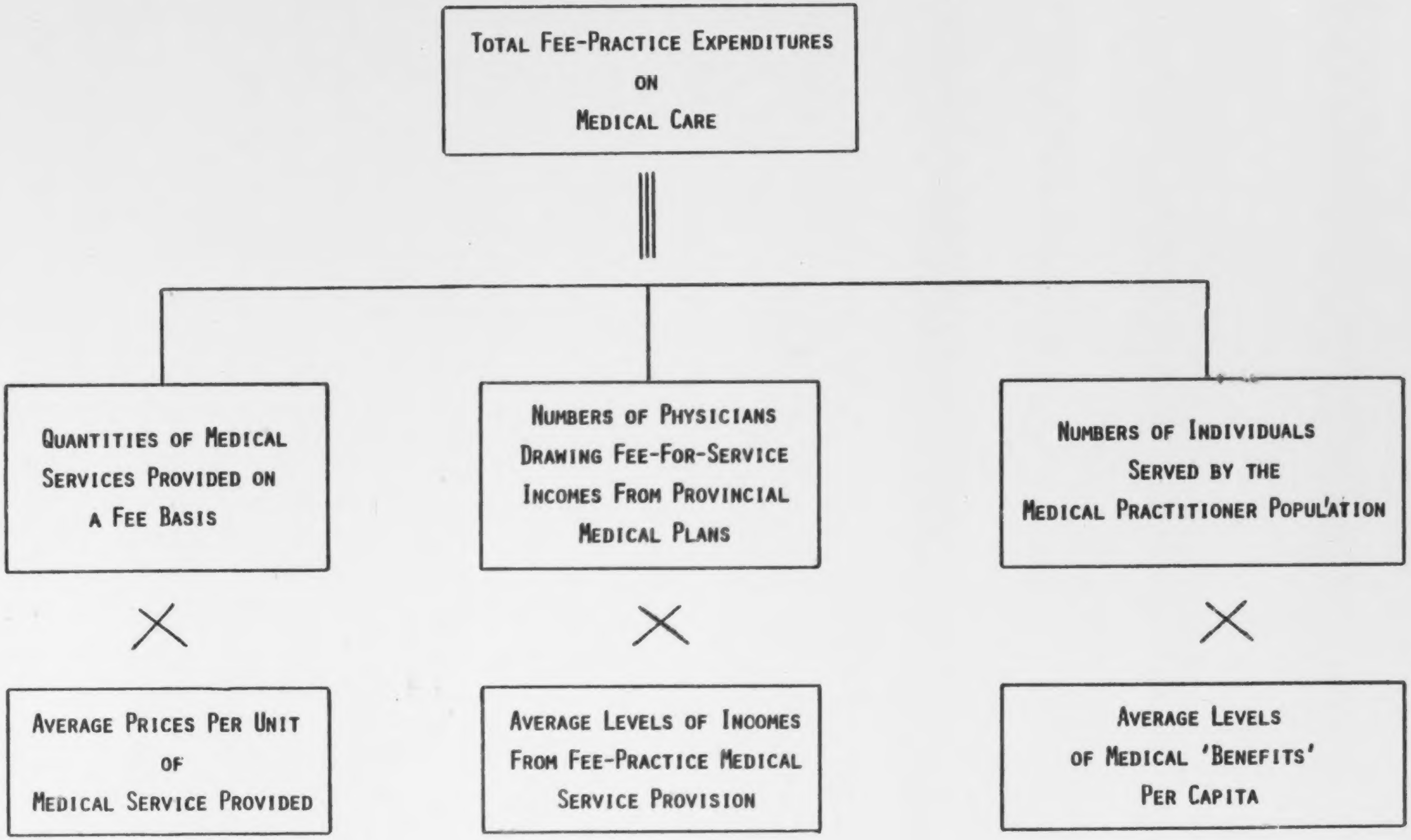
The Quebec Experience

Having examined patterns of expenditure on physician services over almost twenty-five years for Canada and provinces in Chapter III, we return in the present chapter to a selected disaggregation of the data analyzed at the national level in Chapter II. Like Chapter II, the analyses of this and the following chapter are based almost exclusively on data publicly available in annual reports (or equivalent) of the respective provinces' medical services plans. Thus, the data which form the basis of Chapters IV and V go beyond Chapter II in being province-specific, and beyond Chapter III in their level of service detail.

We analyze patterns of utilization per capita and per physician in relation to fee changes over the period 1971-83 (or for as much of that period as we could secure published data in each province). This chapter covers the experience in Quebec, while the following chapter addresses Saskatchewan, Manitoba and British Columbia. The choice of provinces was motivated by a combination of data availability and a wish to be representative of the unique provincial experiences. We are unaware of any reason why the experiences in these four provinces should not fairly reflect the behavioural relationships between fee levels, physician supply and per capita utilization in any of the other provinces.

Our general approach to analyzing provincial trends in medical servicing and expenditure is portrayed in Figure IV.1. There we portray the obvious but nevertheless important identities linking physician

FIGURE IV.1: THE MEDICAL SERVICES SECTOR INCOME-EXPENDITURE IDENTITY


TOTAL FEE-PRACTICE EXPENDITURES ON MEDICAL CARE
≡
QUANTITIES OF MEDICAL SERVICES PROVIDED ON A FEE BASIS
×
AVERAGE PRICES PER UNIT OF MEDICAL SERVICE PROVIDED
NUMBERS OF PHYSICIANS DRAWING FEE-FOR-SERVICE INCOMES FROM PROVINCIAL MEDICAL PLANS
×
AVERAGE LEVELS OF INCOMES FROM FEE-PRACTICE MEDICAL SERVICE PROVISION
NUMBERS OF INDIVIDUALS SERVED BY THE MEDICAL PRACTITIONER POPULATION
×
AVERAGE LEVELS OF MEDICAL 'BENEFITS' PER CAPITA

SOURCE: ADAPTED FROM EVANS (1984) (STRAINED MERCY) numbers and incomes to service price and provision, and to population size and use of services. The interplay of fees (prices to providers), population growth, per capita use, and physician supply and incomes falls out relatively directly from this approach to data disaggregation.

QUEBEC

The Quebec experience with medical services over the period 1971-1983 is perhaps the most interesting of the provincial experiences because Quebec has been far and away the most aggressive of the provinces in holding down physician fees. Over that period, fee levels in Quebec rose an average 3.9 percent per annum in the face of 8.9 general inflation. No other province was close, the second slowest growth coming in Manitoba (6.8 percent per annum) (Barer and Evans, 1985).

But within that rapid erosion of physicians' real fees, we find three specific events that have particular bearing on the issues being addressed in this study. First, Quebec physicians received no fee increase over the period 1970-1975, and then only a one percent increase in 1976. This presents us with a unique (within Canada over this period) opportunity to examine practitioner response to a massive cut in real fees (the C.P.I. rose 53 percent over the period 1970-1976).

Second, an apparent 16.5 percent increase in fees at the end of that period (in 1977) was in reality much less and, equally important, embodied an overt re-parcelling of fee items so as to severely reduce the number of billable procedures. Thus, much of that 16.5 percent increase reflected, for example, the incorporation of diagnostic and minor therapeutic procedures within examination or consultation fees, where such procedures were performed as a result of the examination or consultation. Similarly, minor surgery performed concurrently with major surgery was not separately billable but was incorporated into an appropriate fee item, and specialist procedures performed by practitioners without the appropriate specialization received reduced fees (Regie de l'assurance-maladie du Quebec (RAMQ), Statistiques Annuelles, 1977, p.23).

Third, the agreements with general practitioners which came into force in November 1976, and those with specialists in January 1977, saw the introduction in Quebec of individual "income ceilings" for general practitioners, and *ex post* fee adjustments, based on average incomes, for all practitioners. The ceiling for general practitioners was set at $23,000 per quarter in the first year of the agreement. Once a practitioner reached that ceiling, subsequent claims for the quarter in question were reimbursed at 25 percent of the allowable fee.

This ceiling on general practitioner incomes was increased each year as part of the negotiated settlement, reaching $24,000 and $25,000 per quarter in the second and third years. The policy continues in place today; in 1984 the quarterly ceiling was $32,504 (Contandriopoulos, A.P., 1985, personal communication).

The second component of the incomes policy was directed at all physicians, and took the form of an adjustment to fee levels in response to average income growth. For general practitioners, the first average income 'target' (for the year November 1, 1976 to October 31, 1977) was $66,598, based on the average gross earnings of those general practitioners who received at least $6,000 in each quarter. The corresponding all-specialist target average income in the January 1977 settlement was $76,693, based on practitioners earning at least $24,000 annually. These, too, are re-negotiated periodically, and as of 1984 the target average incomes were $96,779 and $118,725 for general practitioners and specialists respectively; the cut-offs for inclusion in the average income calculation were $8,284 per quarter for general practitioners and $30,300 per annum for specialists. If average annual incomes exceed these targets, fee increases for the next period are adjusted downward so as to bring income growth in line with provincial growth targets (D'Annunzio, S., 1985, personal communication; Contrandriopoulos, A.P., 1985, personal communication).

This major restructuring in 1976/1977 makes somewhat suspect any attempt to analyse full-period trends in utilization. Accordingly, much of our discussion below draws out the important distinction between the 1971-1976 period of no fee growth, and the 1977-1983 period of some fee growth but sharply reduced latitude for à la carte procedural billing.

Over the twelve years 1971 to 1983, Quebec expenditures on medical services more than tripled, from about $270 million to close to $830 million, an annual average increase of 9.8 percent per year (Table IV.1). Growth was about two percent per annum faster in the early period (1971-1976) than in the post-1976 period. Of particular note are the 13.7 percent increase in expenditure coinciding with the fee schedule restructuring and fee increase of 1977 and the largest single

Table_IV.1

MEDICAL COSTS PER CAPITA, QUEBEC, 1971 - 1983

Year	Total Cost ($,000)	% Change	Population	% Change	Cost per Capita	% Change	C.P.I.	% Change	Real Cost per Capita	% Change
1983	$828,294	14.48%	6,513,694	0.73%	$127.16	13.65%	2.776	5.75%	$45.81	7.47%
1982	$723,530	4.68%	6,466,444	0.44%	$111.89	4.22%	2.625	10.81%	$42.62	-5.94%
1981	$691,194	5.11%	6,438,403	0.55%	$107.35	4.53%	2.369	12.49%	$45.32	-7.07%
1980	$657,589	10.21%	6,402,994	0.55%	$102.70	9.61%	2.106	10.15%	$48.77	-0.49%
1979	$596,695	8.86%	6,368,160	0.54%	$93.70	8.28%	1.912	9.13%	$49.01	-0.78%
1978	$548,114	8.27%	6,334,020	1.17%	$86.54	7.02%	1.752	8.96%	$49.39	-1.78%
1977	$506,249	13.66%	6,260,840	0.42%	$80.86	13.18%	1.608	7.99%	$50.29	4.80%
1976	$445,413	8.90%	6,234,540	1.26%	$71.44	7.54%	1.489	7.51%	$47.98	0.03%
1975	$409,025	12.18%	6,156,938	0.54%	$66.43	11.58%	1.385	10.80%	$47.97	0.70%
1974	$364,601	8.90%	6,123,627	0.54%	$59.54	8.31%	1.250	10.91%	$47.63	-2.35%
1973	$334,799	12.71%	6,090,529	0.55%	$54.97	12.09%	1.127	7.54%	$48.78	4.23%
1972	$297,044	10.36%	6,057,055	0.49%	$49.04	9.83%	1.048	4.80%	$46.79	4.80%
1971	$269,150		6,027,764		$44.65		1.000		$44.65	
Average Annual % Change										
1971 - 1983		9.82%		0.65%		9.11%		8.88%		0.21%
1971 - 1976		10.60%		0.68%		9.86%		8.29%		1.45%
1977 - 1983		8.55%		0.66%		7.84%		9.53%		-1.54%

year increase, after two relatively flat years, in 1983.

We begin our disaggregation of those expenditure data in Table IV.1, by first taking the perspective of the recipient population. There we observe that population growth was not only relatively flat (8 percent aggregate over the twelve years), but almost identical in the pre-1977 and post-1976 periods. Thus, per capita expenditure patterns are virtually identical to, but at a level about 0.7 percent per annum lower than, aggregate trends. The cost of medical services per capita rose from $45 in 1971 to $127 in 1983.

But very little of that growth represented other goods and services foregone. Deflating the total expenditure series by the Canadian consumer price index yields 1983 expenditures of about $300 million in constant (1971) dollars, for an annual average constant dollar increase of under 0.9 percent. Similarly, annualized growth on a per capita basis was virtually non-existent and, in fact, real cost per capita fell 1.5% per annum over the period 1977-1983. The shorter period since 1980 is also interesting in that, from 1980-1982 while the C.P.I. was increasing 25 percent, medical care expenditures increased only 10 percent. Then in 1983, those latter costs rose 14.5 percent while general prices increased less than 6 percent. Despite the marked 1983 reversal, we see real costs per capita in 1983 some 6 percent below the 1980 level and, in fact, below the level of 1972.

This flat trend in real per capita expenditures could, of course, result from flat real fee growth in conjunction with flat per capita utilization, or increases (decreases) in fees counterbalanced by declining (increasing) utilization per capita. Table IV.2 makes abundantly clear the fact that the trend in real per capita costs is not mirrored in flat fees or utilization. It is with this table, as well, that the sharp divergence in 1971-1976 and 1977-1983 performance begins to come into focus. As noted earlier, medical service fees rose a total of 1 percent over the period 1971-1976, and even in the later (1977-1983) period rose only 5 percent per annum. This had the effect of reducing the purchasing power of physician fees (at least before tax) of some 7.5 percent per year for five years in the early period. But there was little relief even subsequently. From 1977 to 1982, real fees declined a further 4.2 percent per year, and that erosion was only arrested in 1983 by much reduced general inflation.

The final set of columns in Table IV.2 provides a first look at the relationship between fee levels and utilization. The data are constructed by dividing cost per capita through by the Quebec fee index, the result being a pseudo-volume index that portrays cost per capita as if fees had been constant throughout the period. Over the actual period in which fees were held constant (1971-1976), per capita service use grew at an annual rate of 9.6 percent. Over five years that represents a 58 percent increase in utilization per capita! Furthermore, in each year except 1973-1974, the per capita increase in utilization more than offset the real decline in fees. Most notable were 1971-1972 and 1972-1973, in each of which growth in per capita use exceeded the decline in real fees by over 4 percent.

Table_IV.2

FEE-ADJUSTED COST PER CAPITA, QUEBEC

Year	Real Cost per Capita	% Change	Fee Index	% Change	Real Fees	% Change	Fee-Adjusted Cost per Capita	% Change
1983	$45.81	7.47%	1.589	7.80%	0.572	1.94%	$80.03	5.42%
1982	$42.62	-5.94%	1.474	7.04%	0.562	-3.40%	$75.91	-2.63%
1981	$45.32	-7.07%	1.377	6.99%	0.581	-4.89%	$77.96	-2.30%
1980	$48.77	-0.49%	1.287	1.34%	0.611	-8.00%	$79.80	8.16%
1979	$49.01	-0.78%	1.270	4.27%	0.664	-4.46%	$73.78	3.85%
1978	$49.39	-1.78%	1.218	3.22%	0.695	-5.26%	$71.05	3.68%
1977	$50.29	4.80%	1.180	16.49%	0.734	7.87%	$68.53	-2.84%
1976	$47.98	0.03%	1.013	1.00%	0.680	-6.06%	$70.53	6.48%
1975	$47.97	0.70%	1.003	0.00%	0.724	-9.75%	$66.23	11.58%
1974	$47.63	-2.35%	1.003	0.00%	0.802	-9.84%	$59.36	8.31%
1973	$48.78	4.23%	1.003	0.00%	0.890	-7.01%	$54.81	12.09%
1972	$46.79	4.80%	1.003	0.00%	0.957	-4.58%	$48.89	9.83%
1971	$44.65		1.003		1.003		$44.52	
Average Annual % Change								
1971 - 1983		0.21%		3.91%		-4.57%		5.01%
1971 - 1976		1.45%		0.20%		-7.47%		9.64%
1977 - 1983		-1.54%		5.08%		-4.06%		2.62%

The large fee increase cum item restructuring of 1977 has associated with it a sharp reversal in utilization. But of course even in the face of the income ceiling, both the fee increase and the decline in utilization are over-stated because of the consolidation of the twenty-six ancillary fee items. Accordingly, there is little one can infer about experience from 1976 to 1977, at least at this level of aggregation. The resumption of real fee erosion in 1977-1978 also sees a resumption of increases in utilization per capita, but at a significantly different level. From 1977 to 1978 the increase in per capita utilization fell behind the absolute decline in real fees, for the first time since 1973-74. This is repeated in 1978-79. Then in 1979-80 medical practitioners were hit with a decline in real fees reminiscent of the no-fee-change period of 1973-1975. Utilization per capita 'responded' at a level equally reminiscent of that earlier period. 1981 appears to be somewhat of a second turning point, but one for which there seems to be no obvious structural explanation. In that year and the next we find for the first time falling real fees accompanied by reduced per capita utilization. Then in 1983 this 'lost ground' was made up with a vengeance. Not only did real fees increase for the first time in twelve years (1977 being an anomalous question mark), but utilization per capita, which had risen in every year up to and including 1980 (again ignoring the 1977 experience), returned dramatically to the up-side.

In sum, the period 1971-82 in Quebec could be characterized as one of major and continuous erosion in real fee levels for medical services, accompanied by equally dramatic and (almost) continuous increases in utilization. If one excludes 1976-77, real fees fell an average 5.6 percent per annun. Again ignoring 1976-77, utilization (fee-adjusted cost) rose a remarkably similar 6.5 percent per annum. Even with the 1976-77 cumulative biases built-in, per capita utilization rose 5 percent per year. But in addition to and separate from these dramatic overall trends, is the dichotomy in experience over the two periods. Prior to the major fee schedule restructuring that significantly reduced the number of unique billable items, per capita utilization growth was running at over 9.5 percent per annum. Since the restructuring, (and despite a small resurgence in 1983), this has fallen to 2.6 percent per annum! Thus, the Quebec policy story has had two partially overlapping chapters, the first and longest consisting of continuous fee pressure, the second directly addressing service utilization.

Tables IV.1 and IV.2 served to disaggregate trends in total expenditure into price and utilization components as well as into population and per capita cost components. Utilization in turn was examined from the perspective of population growth and utilization per capita. It seems safe at this point to note that population growth accounted for virtually none of the cost or utilization increase, while the result of real fees and utilization working in opposite directions was major and sustained growth in per capita utilization.

Over the following six tables we take the last of these components, per capita utilization, and disaggregate further by examining trends within specific types of service. The RAMQ disaggregates services at the broadest level into what we have labelled base services (contacts-patients, being the sum of examinations, consultations, psychotherapy sessions[1] and surgical treatment[2]), and ancillary services (actes complementaires (AC), being diagnostic, therapeutic and other services complementary to the provision of base services).

This categorization is collectively exhaustive, as can be seen in Table IV.3. The rationale for the 1977 policy of incorporating many of the complementary services within examination or consultation fees seems abundantly clear here. In the face of constant fee levels, fee-adjusted cost *per capita* for ancillary services rose over 14 percent per annum over the period 1971-76. This is closely mirrored in the actual number of services per capita series (# of AC per capita) in Table IV.4, implying that over this early period there was little shift in the *mix* of such services, just dramatic overall increases spread across the provision of all such services. The drop of 17 percent in fee-adjusted ancillary service cost per capita in 1977 (Table IV.3) reflects the 35 percent drop in the actual number of such services provided (or at least billed; Table IV.4), plus some combination of (i) increased relative fees for those ancillary service items not eliminated, and (ii) the fact that the remaining ancillary services would, even in the absence of fee increases, have been (on average) the more costly of such services. Together these latter two phenomena resulted in an increase in average price per ancillary service of 29 percent over and above the general fee index increase for that year of 16.5 percent! Thus, the restructured fee schedule left the average price of those ancillary service items that remained some 50 percent higher than the average price of an ancillary service in 1976.

Table_IV.3

FEE-ADJUSTED COST PER CAPITA, BY BROAD TYPE OF SERVICE
QUEBEC

Year	Fee-adjusted Cost per Capita	% Change	Fee-adjusted Base Cost per Cap.	% Change	Fee-adjusted AC Cost per Cap.	% Change
1983	$80.03	5.42%	$66.06	6.26%	$13.99	1.90%
1982	$75.91	-2.63%	$62.17	-1.67%	$13.73	-6.86%
1981	$77.96	-2.30%	$63.23	-1.76%	$14.74	-4.61%
1980	$79.80	8.16%	$64.37	8.54%	$15.45	6.78%
1979	$73.78	3.85%	$59.30	4.93%	$14.47	-0.45%
1978	$71.05	3.68%	$56.52	4.55%	$14.53	-0.10%
1977	$68.53	-2.84%	$54.06	2.08%	$14.55	-17.29%
1976	$70.53	6.48%	$52.96	5.44%	$17.59	9.81%
1975	$66.23	11.58%	$50.23	9.02%	$16.02	20.51%
1974	$59.36	8.31%	$46.07	7.33%	$13.29	11.85%
1973	$54.81	12.09%	$42.92	11.38%	$11.88	14.40%
1972	$48.89	9.83%	$38.54	8.77%	$10.39	14.40%
1971	$44.52		$35.43		$9.08	
Average Annual % Change						
1971 - 1983		5.01%		5.33%		3.67%
1971 - 1976		9.64%		8.37%		14.14%
1977 - 1983		2.62%		3.40%		-0.65%

Table_IV.4

COST AND UTILIZATION, ACTES COMPLEMENTAIRES (AC)

Year	AC Fee-adjusted Cost per Cap.	% Change	# of AC per Cap.	% Change	Fee-adjusted Cost per AC	% Change
1983	$13.99	1.90%	2.02	4.56%	$6.93	-2.55%
1982	$13.73	-6.86%	1.93	-0.33%	$7.11	-6.54%
1981	$14.74	-4.61%	1.94	-0.97%	$7.61	-3.68%
1980	$15.45	6.78%	1.96	3.76%	$7.90	2.91%
1979	$14.47	-0.45%	1.88	2.66%	$7.68	-3.02%
1978	$14.53	-0.10%	1.84	4.82%	$7.92	-4.70%
1977	$14.55	-17.29%	1.75	-35.78%	$8.31	28.78%
1976	$17.59	9.81%	2.73	3.84%	$6.45	5.74%
1975	$16.02	20.51%	2.63	21.20%	$6.10	-0.56%
1974	$13.29	11.85%	2.17	10.98%	$6.14	0.78%
1973	$11.88	14.40%	1.95	18.07%	$6.09	-3.10%
1972	$10.39	14.40%	1.65	18.02%	$6.28	-3.07%
1971	$9.08		1.40		$6.48	
Average Annual % Change						
1971 - 1983		3.67%		3.09%		0.56%
1971 - 1976		14.14%		14.25%		-0.10%
1977 - 1983		-0.65%		2.39%		-2.97%

The discussion thus far has emphasized the way in which the increases in frequency of performance served in part to buffer physicians' incomes against the drop in real fees in the early 1970s. This might, but need not, indicate that physicians deliberately chose to perform more of such services in order to maintain their incomes. It might equally be the case that physicians were responding to the availability of new services, and/or of new public resources to pay for previously available services, and were thus shifting their practice styles in a direction which they regarded as better quality patient care. This would imply that the increase in procedural frequency would have occurred even if real fees had not fallen - if so the quantitative impact of fee controls on total expenditure is even greater than we have suggested above.

One cannot wholly rule out this alternative view, and it must always serve as a qualification to the suggestion that falling (real) fees caused a quantity response. (One can, however, rule out a variant, that physicians were shifting their practice styles in response to pressures imposed by tort law. There has not been a "malpractice crisis" in Canada parallel to that observed in the U.S. in the mid-1970s; and there is unlikely to be one in future. The legal systems are different in respects which appear crucial.) But available data on patterns of procedural utilization, as well as the policy responses of the RAMQ, do support contrary inferences.

First, the observations just noted, of rapid increases in the numbers of ancillary services performed but little change in their average cost, suggest proliferation rather than innovation. Secondly, by 1975 there was a clear pattern of association between the average gross receipts of a physician, and his/her patterns of provision of diagnostic and therapeutic services. As Boutin (1979, Table 7) shows, physicians billing $20-$40 thousand per year provided on average .298 complementary procedures per patient contact, divided into .121 of the 26 procedures later (in 1977) consolidated into the visit rate and .177 of other procedures. This number rises to .352 (.134 and .218) in the $40-$60 class; .402 (.136 and .266) in the $60-$80; .568 (.170 and .398) in the $80-$100; and .979 (.244 and .735) in the $100,000 plus. Among these "high rollers", the examination itself accounted for about two thirds the cost of a patient contact (Boutin, Table 6), compared with an average across all GPs of three quarters. "High-cost" styles of practice were clearly associated with the highest GP incomes; the $100,000-plus GPs billed for $3.92 in other procedures per patient contact in 1975 and provided 11,472 patient contacts, so received on average $44,970 each from such activity. The average for all GPs was $11,477, about one quarter as much; and even the next-highest group of earners, the $80-$100,000 class, billed on average only $23,736. Procedures were profitable.

Moreover, Boutin shows that other practitioners were moving toward the high-cost style. Between 1975 and 1976 the frequency of performance of other acts per patient contact rose in every GP income class but the highest, and rose faster the lower the income class. (This is not a mix phenomenon; Boutin compared the same GPs in 1975 and 1976.) This suggests that "high-priced" styles of care were spreading. At the same time, average costs per procedure were falling, consistent with the observation that in 1975 the higher the income classes, the lower the average amount billed per procedure. High costs per patient contact are associated with high frequencies of low-cost procedures, which is not what one would expect from the introduction of new techniques.

In any case, rightly or wrongly, the RAMQ clearly regarded the practice styles of the "high rollers" as inappropriate rather than as worthy of emulation. The combination of individual practitioner ceilings and elimination of separate reimbursement for the 26 minor diagnostic and therapeutic procedures struck hardest at the upper levels of the income scale. As pointed out below, at least in the short run these measures had more effect on the distribution of incomes than on the average level. This supports an inference of a deliberate attempt to discourage large numbers of procedures per contact.

Before leaving this early period, it is interesting to note that just prior to this major policy shift, the growth in provision of ancillary services dropped off sharply in 1976. Whereas increases from 1971 to 1975 in ancillary services per capita averaged 17 percent, the increase in 1976 was just under 4 percent (Table IV.4). Associated with this sharp drop, however, was an equally abrupt shift in the average price of ancillary services provided. This price had actually fallen (relative to overall fees) almost 6 percent from 1971 to 1975 while utilization raced ahead. In 1976, concurrent with the slowing of utilization growth, the average cost increased almost 7 percent in one year (5.74 percent over and above the 1 percent general fee increase).

The later period, 1977-1983, is equally interesting, but reflects quite different behaviours. As noted in our discussion of Table IV.2, this period was one of far slower growth in per capita utilization generally (2.6 percent per year vs 9.6 percent in the earlier period). But this dichotomy is even more marked within ancillary services. Subsequent to the restructuring of 1977, there has been no overall increase in fee-adjusted ancillary service cost per capita. In fact that series declined from $14.55 in 1977 to $13.99 in 1983. Furthermore, the one year during this period in which such utilization appeared again to be gaining steam (1980), was followed immediately by two years of sharp decline (Table IV.3). Table IV.4 provides some clues as to the phenomena underlying this experience but because the published annual reports do not provide independent information on fee level changes among ancillary services, the story must remain incomplete. What is evident from the data we have been able to compile is that growth in the actual number of services did, indeed, drop sharply, from 14.25 percent during 1971-1976, to 2.4 percent from 1977 to 1983. Thus, there seems little doubt that the fee schedule restructuring had the intended effect of choking off growth in utilization among (or at least in payments for/reporting of) diagnostic and therapeutic procedures by shifting from à la carte to visit billing.

What we are less able to be conclusive about is the components of the fee-adjusted cost per AC series. This series fell an average 3 percent per annum over the period 1977-1983, reflecting some combination of shifting mix (toward less costly services) and falling relative fees. But reference to the fee index in Table IV.2 and the fee-adjusted cost per base service in Table IV.5 provides some insight. For example, in

Table_IV.5

COST AND UTILIZATION, BASE SERVICES

Year	Fee-adjusted Base Cost per Cap.	% Change	Base Services per Cap.	% Change	Fee-adjusted Cost per Base Service	% Change
1983	$66.06	6.26%	5.68	3.39%	$11.62	2.78%
1982	$62.17	-1.67%	5.50	0.52%	$11.31	-2.18%
1981	$63.23	-1.76%	5.47	-0.97%	$11.56	-0.80%
1980	$64.37	8.54%	5.52	6.10%	$11.66	2.29%
1979	$59.30	4.93%	5.20	3.51%	$11.39	1.37%
1978	$56.52	4.55%	5.03	2.24%	$11.24	2.26%
1977	$54.06	2.08%	4.92	0.48%	$10.99	1.59%
1976	$52.96	5.44%	4.89	3.28%	$10.82	2.09%
1975	$50.23	9.02%	4.74	5.23%	$10.60	3.61%
1974	$46.07	7.33%	4.50	4.29%	$10.23	2.91%
1973	$42.92	11.38%	4.32	7.36%	$9.94	3.75%
1972	$38.54	8.77%	4.02	4.24%	$9.58	4.34%
1971	$35.43		3.86		$9.18	
Average Annual % Change						
1971 - 1983		5.33%		3.28%		1.98%
1971 - 1976		8.37%		4.87%		3.34%
1977 - 1983		3.40%		2.44%		0.94%

1978 the average cost of an ancillary service fell about 1.6 percent, in so doing losing about 4.7 percent to overall fee growth. Since the average cost of each base service grew about 2 1/4 percent relative in the same year, and since the ratio of base to ancillary service costs in 1978 was just under 4 to 1, we can conclude that there was some shifting in service mix. What we cannot tell is whether that shift was more or less prevalent in ancillary than in base services. Similarly (and even more pronounced), in 1980 we find the average cost of both base and ancillary services increasing over 2 percent relative to the overall fee index. The only way this is possible is in the presence of relatively significant shifts toward a more costly mix within at least one (but probably both) categories of service.

Bearing this combination of fee change and mix change in mind, we see in Table IV.4 that in 1978 and 1979, the cost of the average ancillary service relative to overall fees fell sharply, but utilization increased almost enough to leave fee-adjusted cost per capita unchanged. Then 1980 saw a significant shift in service mix toward more costly servicing, in conjunction with a 3.75 percent increase in the number of ancillary services received per capita. This happened to be the year in which physicians received only a 1.3 percent fee increase, in the face of 10 percent general inflation, for an 8 percent drop in real fees in one year. In each of 1981 and 1982 physicians received fee increases of about 7 percent, returning the rate of purchasing power erosion to 1978 and 1979 levels. The number of ancillary services per capita remained flat, but there was a sharp drop in the average cost of ancillary services relative to overall fees. Since the relative cost of base services also fell in those two years, this almost certainly implies a marked shift in ancillary service mix toward less costly services. An unprompted shift of this magnitude in the face of declining real fees would be difficult to explain, except by sharply altered population service requirements. However, we are unaware of any policy change or fee item restructuring that would provide an alternate explanation. This decline in average fee-adjusted cost per ancillary service continued into 1983, but in that year was accompanied by the fastest growth in number of services since 1978 (Table IV.4).

Thus, while ancillary service utilization (fee-adjusted cost) per capita fell slightly over the 1977-1983 period overall, the period contains a number of different price/utilization combinations. In 1978 and 1979, a sharp fall in average fee-adjusted cost per ancillary service was accompanied by an offsetting increase in the number of services. 1980 was a year of major upside breakout with both number of services and average cost moving up sharply. By 1980, fee-adjusted ancillary service cost per capita was 6 percent above 1977 levels. Then in 1981 and moreso in 1982, while number of services per capita remained relatively flat, the cost per service lost 6 percent per year to average fees. Finally, 1983 saw a return to the 1978 and 1979 pattern of falling relative prices offset by increased servicing.

Tables IV.5 through IV.8 provide a similar look at base services. Recall that over the period 1971-1976, ancillary service fee-adjusted cost per capita rose over 14 percent per year, and this rapid growth was entirely attributable to growth in the number of services. Growth in fee-adjusted base service cost per capita was a less dramatic but still substantial 8.4 percent per annum. This increase was about 60 percent number of services per capita and 40 percent relative growth in cost per service. In fact, what one observes in Table IV.5 is relatively steady growth of about 5 percent per year in base services received per capita, accompanied by an apparently equally steady shift over the period toward a more costly mix of base services. Since base services constitute the major share of total expenditure, one can hazard from this that falling overall real fees were accompanied not only by rapid increases in servicing but by shifts generally toward more costly servicing.

In Tables IV.6 through IV.8 we partially disaggregate base services by focusing on the three major types of service - consultations, examinations and surgery. We note that consultations and examinations accounted for the rapid growth in fee-adjusted base service costs per capita over the 1971-1976 period. The share of base service expenditures accounted for by surgery fell from 28.4 percent in 1971 to 22.8 percent in 1976. Growth in per capita consultations was rapid through 1975, then fell back in 1976. Average fee-adjusted cost per consultation was relatively invariant (Table IV.6). In contrast, fee-adjusted expenditure per capita on examinations increased right through 1976, and in this case fee-adjusted cost per service accounted for more of the increase than number of services per capita. Thus, in addition to growth in the number of examinations, there was a steady shift throughout this early period to the more comprehensive, higher fee types of examinations (since there were no fee increases to speak of).

TABLE_IV.6

COST AND UTILIZATION, CONSULTATIONS

Year	Fee-adjusted Cost per Capita	% Change	No. of Services per Cap.	% Change	Fee-adjusted Cost per Service	% Change
1983	$6.95	4.08%	0.310	-0.26%	$22.43	4.35%
1982	$6.68	-2.74%	0.311	0.34%	$21.49	-3.07%
1981	$6.86	-1.21%	0.310	2.36%	$22.17	-3.49%
1980	$6.95	10.81%	0.302	10.57%	$22.98	0.22%
1979	$6.27	7.51%	0.273	5.40%	$22.93	2.00%
1978	$5.83	2.08%	0.259	3.18%	$22.48	-1.07%
1977	$5.71	6.29%	0.251	7.37%	$22.72	-1.01%
1976	$5.38	-2.75%	0.234	-2.88%	$22.95	0.13%
1975	$5.53	16.45%	0.241	14.63%	$22.92	1.59%
1974	$4.75	15.94%	0.210	14.45%	$22.56	1.30%
1973	$4.09	15.67%	0.184	14.85%	$22.27	0.72%
1972	$3.54	7.60%	0.160	7.41%	$22.11	0.18%
1971	$3.29		0.149		$22.07	
Average Annual % Change						
1971 - 1983		6.43%		6.29%		0.13%
1971 - 1976		10.32%		9.47%		0.78%
1977 - 1983		3.31%		3.54%		-0.22%

TABLE_IV.7

COST AND UTILIZATION, EXAMINATIONS

Year	Fee-adjusted Cost per Capita	% Change	No. of Services per Cap.	% Change	Fee-adjusted Cost per Service	% Change
1983	$44.31	5.80%	4.900	3.57%	9.04	2.15%
1982	$41.88	-0.80%	4.731	0.60%	8.85	-1.40%
1981	$42.22	0.67%	4.702	-1.21%	8.98	1.90%
1980	$41.94	8.52%	4.760	5.88%	8.81	2.49%
1979	$38.64	7.27%	4.496	3.71%	8.60	3.43%
1978	$36.03	6.34%	4.335	2.69%	8.31	3.55%
1977	$33.88	3.77%	4.221	0.32%	8.03	3.43%
1976	$32.65	10.33%	4.208	3.64%	7.76	6.46%
1975	$29.59	9.43%	4.060	4.19%	7.29	5.03%
1974	$27.04	8.72%	3.897	3.57%	6.94	4.98%
1973	$24.87	11.33%	3.762	6.63%	6.61	4.41%
1972	$22.34	7.94%	3.529	3.52%	6.33	4.27%
1971	$20.70		3.409		6.07	
Average Annual % Change						
1971 - 1983		6.55%		3.07%		3.37%
1971 - 1976		9.54%		4.30%		5.03%
1977 - 1983		4.57%		2.52%		2.01%

TABLE_IV.8

COST AND UTILIZATION, SURGERY

Year	Fee-adjusted Cost per Capita	% Change	No. of Services per Cap.	% Change	Fee-adjusted Cost per Service	% Change
1983	$11.55	9.34%	0.300	3.84%	38.54	5.30%
1982	$10.57	-3.52%	0.289	0.60%	36.60	-4.09%
1981	$10.95	-11.86%	0.287	-2.90%	38.16	-9.22%
1980	$12.43	8.34%	0.296	6.28%	42.04	1.93%
1979	$11.47	-1.89%	0.278	0.67%	41.24	-2.55%
1978	$11.69	1.60%	0.276	3.30%	42.32	-1.64%
1977	$11.51	-4.69%	0.267	-4.16%	43.03	-0.56%
1976	$12.07	-3.26%	0.279	-0.75%	43.27	-2.52%
1975	$12.48	4.10%	0.281	7.82%	44.39	-3.45%
1974	$11.99	0.49%	0.261	2.21%	45.97	-1.68%
1973	$11.93	8.71%	0.255	7.78%	46.76	0.86%
1972	$10.97	9.09%	0.237	8.01%	46.36	1.00%
1971	$10.06		0.219		45.90	

Average Annual % Change						
1971 - 1983		1.16%		2.65%		-1.45%
1971 - 1976		3.72%		4.95%		-1.18%
1977 - 1983		0.07%		1.92%		-1.82%

Surgical fee-adjusted costs per capita rose far less rapidly over the 1971-76 period than comparable costs for either examinations or consultations (3.7 percent vs 9.5+ percent per annum). But this slower growth resulted from a significant erosion from 1973 to 1976 in fee adjusted cost per service. Actual servicing per capita was growing at a rate comparable to that for examinations.

The year 1977 does not generate the same sort of anomaly for the base services data series as for the ancillary services, because the fee item restructuring affected primarily the actes complementaries. Nevertheless, we do find 1976-77 growth in fee-adjusted cost per capita being significantly slower than in any of the 1971-76 years (Table IV.5), a reflection primarily of reductions in examinations (Table IV.7). This overall slowing in 1977 is, in turn, driven by the flat growth of number of services (Table IV.5), which again reflects the dominant "examinations" category (Table IV.7). But the flattening in number of services in 1977 is also partly a product of the incorporation of minor surgery fee items within major surgical procedures. Thus, from 1976 to 1977 there is over a 4 percent decline in per capita surgical procedures (Table IV.8). Given the restructuring, however, we found surprising the relatively minor impact on surgical cost per procedure.

For the 1977-83 period, average fee-adjusted cost per base service grew far less rapidly then in the earlier period, primarily due to the decline in relative costs in 1981 and 1982. But growth in number of services per capita was also about half that in the earlier period (Table IV.5). The fall in cost per service in 1981 and 1982 was evident in all three of the specific types of service, although most apparent for surgical services, and secondarily consultations. The slower growth in services per capita is also a reflection of trends within all three major types of service.

The year 1980 stands out within the period 1977-1983 as one of extremely rapid increase in surgical services and consultations. But for surgery it was the first year in seven in which that type of service showed a relative increase in fee-adjusted cost per service, whereas for consultations it was an unremarkable cost year. Recall that 1980 was the year in which overall physician fees lost about 8 percent to inflation.

In general, the period 1977-1983 saw no particular pattern of association between year-by-year changes in relative service costs among components of base services, and corresponding service utilization. Surgical procedures showed a relative decline in per service costs, but also the slowest growth in utilization. The fastest growth in servicing was in consultations, whereas the relative cost of examinations grew most rapidly.

If we return momentarily to Table IV.3, we note that much of the later period (1977-1983) slowdown in fee-adjusted cost per capita results from the major drop over the period 1980-82. The decline of $3.89 over the two years was distributed about 55 percent in base services, 45 percent in complementary services. Within base services, the major component of the drop is surgical services (Table IV.8). But it is primarily a drop in cost per service rather than a major drop in services per capita.[3]

In the final two tables of this chapter we consider the Quebec experience from the final of the three perspectives portrayed in Figure IV.1, that being in terms of physician numbers and incomes. The first of these Tables (IV.9) attempts to show the interrelationships of number of providers, provider incomes, and provider servicing levels. The number of physicians increased 64 percent over the period, an annual rate of increase of 4.2 percent, or 3.5 percent faster than general population. While this growth has slowed somewhat from the rapid early-70s pace, even 1983 showed over 3 percent growth in physician supply.

From 1971-1976, the supply of physicians rose over 6.3 percent per year. Fees rose a total of 1 percent. Yet payments per practitioner increased 4 percent per year. While the per practitioner increase in servicing of 3.8 percent per year was insufficient to offset entirely the 7.5 percent annual erosion in real fees (Table IV.2), it did hold losses of real income per physician to (a still substantial) 3.95 percent per annum. Thus, the increase in utilization per capita of 9.64 percent (Table IV.2) can be partitioned into a 5.62 percent increase in physicians per capita (Table IV.10) and a 3.8 percent increase in servicing per physician (Table IV.9). Table IV.10 provides some insight into the nature of the increased servicing by physicians. In the face of an average 5.3 percent reduction in population per physician over the period, base services provided by each physician fell almost not at all (Table IV.5 showed base services per capita increasing 4.9 percent per annum), and the average practitioner increased the provision of

Table_IV.9

EXPENDITURE AND UTILIZATION PER PHYSICIAN, QUEBEC

Year	# of M.D.s	% Change	$ per M.D.	% Change	Real $ per M.D.	% Change	Fee Index	Fee-adjusted $ per M.D.	% Change
1983	11,331	3.12%	$73,100	11.01%	$26,333	4.98%	1.589	$46,004	2.98%
1982	10,988	1.84%	$65,847	2.78%	$25,085	-7.24%	1.474	$44,673	-3.98%
1981	10,789	2.86%	$64,065	2.19%	$27,043	-9.16%	1.377	$46,525	-4.49%
1980	10,489	3.39%	$62,693	6.59%	$29,769	-3.23%	1.287	$48,713	5.18%
1979	10,145	2.99%	$58,817	5.70%	$30,762	-3.15%	1.270	$46,312	1.37%
1978	9,850	2.23%	$55,646	5.91%	$31,761	-2.80%	1.218	$45,686	2.60%
1977	9,635	2.53%	$52,543	10.85%	$32,676	2.65%	1.180	$44,528	-4.84%
1976	9,397	4.66%	$47,400	4.05%	$31,833	-3.22%	1.013	$46,791	3.03%
1975	8,979	4.81%	$45,553	7.04%	$32,891	-3.40%	1.003	$45,417	7.04%
1974	8,567	4.27%	$42,559	4.44%	$34,047	-5.84%	1.003	$42,431	4.44%
1973	8,216	6.38%	$40,750	5.95%	$36,158	-1.48%	1.003	$40,628	5.95%
1972	7,723	11.75%	$38,462	-1.24%	$36,701	-5.76%	1.003	$38,347	-1.24%
1971	6,911		$38,945		$38,945		1.003	$38,829	
Average Annual % Change									
1971 - 1983		4.21%		5.39%		-3.21%			1.42%
1971 - 1976		6.34%		4.01%		-3.95%			3.80%
1977 - 1983		2.74%		5.66%		-3.53%			0.54%

Table_IV.10

UTILIZATION PER PHYSICIAN BY BROAD TYPE OF SERVICE, QUEBEC

Year	Fee-adjusted Cost per Physician	% Change	Population per Physician	% Change	Base Services per M.D.	% Change	AC per M.D.	% Change	AC per Base Service	% Change
1983	$46,004	2.98%	574.9	-2.32%	3267.28	0.99%	1159.88	2.14%	0.355	1.14%
1982	$44,673	-3.98%	588.5	-1.38%	3235.30	-0.87%	1135.59	-1.71%	0.351	-0.85%
1981	$46,525	-4.49%	596.8	-2.24%	3263.79	-3.19%	1155.38	-3.19%	0.354	0.00%
1980	$48,713	5.18%	610.4	-2.75%	3371.30	3.19%	1193.44	0.91%	0.354	-2.21%
1979	$46,312	1.37%	627.7	-2.38%	3267.20	1.04%	1182.73	0.21%	0.362	-0.82%
1978	$45,686	2.60%	643.0	-1.04%	3233.55	1.17%	1180.25	3.73%	0.365	1.96%
1977	$44,528	-4.84%	649.8	-2.06%	3196.02	-1.58%	1137.78	-37.10%	0.358	-35.73%
1976	$46,791	3.03%	663.5	-3.24%	3247.45	-0.07%	1808.83	0.48%	0.557	0.54%
1975	$45,417	7.04%	685.7	-4.07%	3249.59	0.94%	1800.27	16.26%	0.554	15.18%
1974	$42,431	4.44%	714.8	-3.58%	3219.18	0.56%	1548.43	7.02%	0.481	6.42%
1973	$40,628	5.95%	741.3	-5.48%	3201.14	1.47%	1446.91	11.60%	0.452	9.98%
1972	$38,347	-1.24%	784.3	-10.08%	3154.66	-6.27%	1296.56	6.13%	0.411	13.22%
1971	$38,829		872.2		3365.60		1221.71		0.363	
Average Annual % Change										
1971 - 1983		1.42%		-3.41%		-0.25%		-0.43%		-0.19%
1971 - 1976		3.80%		-5.32%		-0.71%		8.16%		8.94%
1977 - 1983		0.54%		-2.02%		0.37%		0.32%		-0.14%

auxiliary services associated with each base service by almost nine percent per annum! Little wonder, then, that in 1977 Quebec instituted a restructuring of ancillary service fee items.

The effect of the 1977 fee increase-cum-fee restructuring was twofold. First, the fee increase aspect was clearly at least partly true fee increase per unit of time, because it resulted in a dramatic jump in payments per capita. This had the effect of providing the only real increase in payments per physician over the period 1971-1982, although that was also partly a product of slower growth in physician supply (2.5% down from 4+% over the previous 5 years). From 1971 to 1976 physician real incomes had fallen a total of 18 percent, and about 2.6 percent of that was recovered in 1977 before the erosion began in earnest again the following year.[4] The 4.8 percent fall in per physician servicing is, of course, a reflection primarily of the fee schedule restructuring, shown vividly for ancillary services in Table IV.10. But in addition it would appear that there was a one year change in the pattern of base services provision, down over 1.5 percent per physician.

The period 1977-83 was one of slower growth in the supply of physicians (2.7 percent vs 6.3 percent). This combined with much faster growth in nominal fee levels yielded more substantial increases in payments per physician. But with general inflation also slightly up in this later period, real incomes per physician continued to fall at about the same rate, a substantial 3.5 percent per year. What is most interesting about this period from this perspective is the impact of the fee item restructuring on patterns of service provision. While real fees (Table IV.2) were falling about 3.5% less rapidly in the later period relative to 1971-76, real incomes per physician fell at about the same rate in both periods because service provision per physician (fee-adjusted $ per M.D.) was also growing about 3.25 percent less rapidly in the later period. This reflects the dramatic shift in the pattern of billings for ancillary services. Relative to base services, the number of ancillary services actually fell over the period 1977-83, in sharp contrast to the 9 percent per annum relative growth for 1971-76. With many of the most frequently employed ancillary service items embodied within base services, this again illustrates that the latitude for increased utilization would appear to have been shut down.

An examination of single years in this later period provides a number of interesting patterns. From Table IV.2 we know that real fees fell sharply in each year from 1978 through to and including 1982. The pattern of service provision per physician for the first three of those years appears to be at least consistent with a story of attempted recouping through the utilization side. Particularly in 1980, when real fees fell 8 percent, we find over a 5 percent increase in per physician utilization. But 1981 and 1982 again stand out as years in which not only were real fees hammered hard, but provision of both base and ancillary services per physician were also down sharply. The information we have has as yet provided no explanation for this anomaly.

Then 1983 stands out as unique in a number of respects. First, it was only the second year in this entire twelve year period in which physicians saw some real fee growth (almost 2 percent). But at the same time, the erosion in number of potential patients per physician accelerated (after a slowing in 1982), to 2.3 percent. Despite this fall in patient availability, utilization per practitioner increased 2.98 percent, implying the 5.4 percent increase in utilization per capita discussed earlier. This utilization increase was driven largely by a return to some growth in the number of ancillary services associated with each base service. Thus, in the early part of the period we see real fees and patient availability falling, and service provision per patient and per physician rising sharply. Then in 1981 and 1982, both service provision and fees fall, so that over this two year period real incomes decline by over 15 percent. Five percent is recouped in 1983 through a combination of higher real fees and utilization per capita increasing faster than population per physician is falling.

Of course one must not lose sight of the second thrust of the 1976/77 policy initiatives, that being the income ceilings and targets. The experience just described could be partly attributable to physicians' responses to those income constraints. Certainly a reduction in services provided by any individual physician might be expected in the face of an income ceiling. The likely effect of the target average income fee adjustments is less clear.

For the purposes of this analysis, it would be extremely useful to be able to differentiate the utilization effects of overall fee pressure, fee item restructuring, income ceilings, and the target average incomes policy. As noted in Chapter I, the first and last of these are really indistinguishable, since average incomes above targets are reflected in next period's overall fee pressure. Differentiating among the remaining three effects has been partially accomplished to the extent that our comparison of pre- and post-1976/77 experiences does suggest a major dichotomy in utilization patterns. The remaining disaggregation of effects, as between fee item consolidation and income ceilings, is beyond the scope of our analytical coverage here, but is nevertheless important to drawing policy lessons from the Quebec experience. Fortunately, interpretive assistance is available from the RAMQ itself (Boutin, 1979).

Boutin attempted to assess the effects of the income ceilings on the provision of base services by general practitioners. He approached this by examining the experience of general practitioners with different income levels, over the period November 1, 1975 to October 31, 1977. This allowed not only a pre/post analysis for general practitioners, but also 'control' comparisons with (i) specialists who were not subject to the income ceiling policy, but who did receive a substantial fee increase in January 1977, (ii) general practitioners over the pre-adjustment period of November 1, 1974 to October 31, 1976, a period of no ceilings and no fee increases, and (iii) specialists over the earlier period.

Thus, Boutin's data set allowed him to compute rates of change, by income class, for four groups of physicians who were active in consecutive years: general practitioners 1976 over 1975, and 1977 over 1976; and specialists over the same two periods; and for five different measures of activity: patient contacts, number of days worked in which at least $25 of fees was received; number of patient contacts per day worked; number of stretches of seven or more consecutive days of no work; and total days other than the 'consecutive stretches of seven or more' not worked. Physicians were grouped into income classes as follows: $0-19,999; 20,000-39,999; 40,000-59,999; 60,000-79,999; 80,000-99,999; 100,000+. Since the ceiling was initially about $92,000 annually, it turns out that only the 3.7 percent of general practitioners earning over $100,000 and perhaps a quarter to a third of the 7.5 percent earning between $80,000-99,999 would have been affected; in other words, no more than 6-7 percent would likely have been affected by the ceiling in the first year.

Among the small group of general practitioners who billed over $100,000 per year, patient contacts fell 20.6 percent in the first year of the agreement (1977 over 1976), in contrast with a much smaller 6.8 percent fall, 1976 over 1975. Boutin concludes that the difference, or 14.8 percent ((.794/.932)-1) is attributable to the income ceiling. One might like to have a longer pre-policy period to rule out the 6.8 percent as an anomalous slowing in a very rapid general decline in patient contacts. Indeed, if this were all there was, one would be hard pressed to say anything conclusive. But it turns out to be only one among a number of pieces forging a remarkably consistent story.

For specialists, the corresponding figures (1977 over 1976, and 1976 over 1975, respectively) were 5.3 percent and 4.7 percent, suggesting rather strongly that there was a major reduction in patient contacts among the small group of general practitioners for whom the income ceiling was likely to pinch in each quarter.

Among the general practitioners in the next income class ($80-99,999), the reductions were 9.5 per cent post-implementation, 6.0 percent in the previous year, for a much smaller net swing of 3.7 percent. Furthermore, for the rest of the general practitioners earning $20,000 or more, patient contacts rose faster or fell less in 1977 over 1976, than 1976 over 1975; and for the group as a whole there was no change! Boutin concludes that the high earners were affected, and affected a lot, as one might have expected. But they represent only 6 percent of his study group, so the overall impact on all GPs of the reductions among the 'high-rollers' is at most one to two percent. One might infer by the absence of overall change that the rest of the group was picking up the patient contacts dropped by the high earners, but this is only speculation.

As for days worked and patient contacts per day worked, Boutin finds declines of 11 percent and 4.4 percent respectively among the over $100,000 group. For all general practitioners the corresponding figures are +0.6 percent and -0.5 percent or, again, effectively no change; for the $80,000-99,999 group, -1.5 percent and -2.2 percent. Thus, the high earners reduced their patient contacts primarily through reduced days of work; secondarily by shorter days or other patterns of practice changes. It turns out, in fact, that almost all the fall in days worked is concentrated in stretches of seven days or more -- more weeks off rather than shorter days or weeks. No changes are apparent in either measure of activity for specialists.

Boutin concludes from this analysis that the ceiling did have the effect of reducing activity among those on whom it was 'binding', and furthermore that the 'success' of the ceiling was correlated positively with the income of the practitioner. The practitioners' response seems to have been to move along the income-leisure tradeoff in quantum leaps -- longer or more vacations rather than shorter days or weeks.

But of more direct import to the present study, and not brought out by Boutin, is that the ceiling appears to have no effect on total activity by general practitioners. His data do not permit us to conclude that workload was simply redistributed to the lower income general practitioners, but statistically this is the reported net effect. That causal inference is not critical here in any event. The point is that the overall effect of the income ceiling was no effect; the ceiling cannot be offered as an explanation of the dichotomy in patterns of service provision and post-1976/77.

This suggests that the consolidation of twenty-six diagnostic and therapeutic procedures within patient contact (examinations, consultations, etc.) fees was the major causal element in the dramatic post-1976/77 decline in per capita utilization in Quebec.

SUMMARY

The Quebec experience with administered fee schedules is really a tale of two policies. The first, lasting for the entire period 1971-83, was one of stringent fee control. While there has been some growth in fees since 1977 even in this later period that growth has fallen well short of general inflation (except in 1983). The earlier 1971-76 period was one unique in Canada for its virtual absence of even nominal fee increases. The second policy, apparently in response to the effect of the first, was a major restructuring of fee items so as to reduce drastically the number of unique billable diagnostic and other procedural fee items. Overlayed on these policies was continuous and significant growth in physician supply which resulted in a 50 percent increase over the twelve years in physician availability per capita.

But while real fees fell 43 percent over twelve years, real cost per capita held virtually steady. With physicians per capita increasing dramatically, real 'incomes' per physician fell by about 32 percent. While nominal fees increased 55 percent (all since 1976), costs per capita rose 185 percent, implying an increase in utilization (fee-adjusted cost) per capita over the twelve years of 80 percent! Since population per physician fell 34 percent, it must follow that service provision per physician increased about 18.4 percent. This struck us as remarkable in the face of flat population growth and the 64 percent increase in physician supply.

We identified some sharp contrasts in the 1971-76 vs 1977-83 periods. The earlier period of no fee changes was characterized by dramatic increases in utilization per capita, and somewhat less dramatic but still substantial increases in service provision per physician. This increased servicing was dominated by one year rates of growth in ancillary service provision per base service of 10 percent in 1973, 13 percent in 1972 and over 15 percent in 1975. The growth in base services during this period followed the growth in physician supply rather closely. This would appear to sustain a story of intense fee pressure being partially offset by increased patient visit rates and, more dramatically, by sharply increased complementary servicing associated with each such visit. Even that pattern, however, failed to stem the erosion of real incomes (although clearly it could have been worse).

In the face of a doubling of ancillary services per capita in five years, the fee restructuring policy removed the scope for à la carte billing for many ancillary procedural items. This, combined with continued but less concerted pressure on fees, had the effect of actually reducing real cost per capita over the period 1977-83. During this later period, the reduction in real fees of 22 percent was again partially offset by increased utilization per capita of 17 percent. But physician supply increased 18 percent; in this later period, then, we find severely curtailed increases in service provision per physician. It is of course in the pattern of ancillary service provision that we find the major difference. With much of the scope for ancillary service billing removed, the provision per physician of base services actually grew slightly from 1977-83, in contrast to a slight decline from 1971-76, this despite the continued steady growth in the supply of physicians relative to population.

We have gone to considerable lengths in analyzing the Quebec experience because it affords perhaps the best Canadian opportunity to scrutinize patterns of association of fees, physician supply, and utilization. In the following chapters we examine somewhat more briefly the experiences in B.C., Saskatchewan and Manitoba.

FOOTNOTES

[1] There was a change in 1976 in the manner in which psychiatric services were counted. In the years up to and including 1976, utilization was units of psychiatric treatment; from 1977 on this category was psychotherapeutic sessions. The differences are minor, being in the order of 1% for psychiatric services which is, itself, the smallest of the four types of service embodying base services. Mr. Pierre Bergeron kindly provided data that carried the old classification forward to 1977, so that the discontinuity (such as it is) in our data will be between 1977 and 1978.

[2] Surgical assists and anaesthesia are included in ancillary services rather than in surgery (RAMQ, *Statistiques Annuelles, 1983*, p. 41).

[3] In particular, the drop in surgical utilization (fee-adjusted cost per capita) does not appear to be the result of an out-migration of surgical practitioners over that period. The fact that most of the drop was on the fee/service mix side makes this an unlikely explanation in any case. Table IV.9 does show a slowing in growth in the number of practitioners in 1982. But population per active civilian physician fell about 2.6% in 1981 over 1980, and a further 3.8% in 1982. Physician supply *relative to population* grew more rapidly in those two years than the average relative growth over the longer period 1975-1983 (see table below). There were specialty differences in growth rates, but they would not appear to provide any of the explanation for the relatively large decline in surgical costs per capita. While population per physician was falling 6.4% from 1980 to 1982, that per specialist fell 5%. But per *surgical* specialist the rate of decline was 2.3%, and population per general surgeon fell less than 1%. What is important to this particular line of argument, however, is the rates of growth in the period 1980-82 relative to the longer period, within each sub-group of practitioners. The data below suggest no atypical trend among surgical practitioners during the two years in question:

Population Per Active Civilian Physician, by Broad Specialty Group

	Total A.C.P.	% Change	Total Specialists	% Change	Surgical Specialists	% Change	General Surgeons	% Change
1983	575.5	-1.89%	1068.7	0.12%	3261.7	0.88%	10731.0	1.39%
1982	586.6	-3.82%	1067.4	-1.89%	3233.2	-0.57%	10583.4	-0.39%
1981	609.9	-2.61%	1087.9	-3.25%	3251.7	-1.73%	10624.4	-0.44%
1980	626.3	-1.11%	1124.5	0.26%	3309.0	1.74%	10671.7	1.89%
1979	633.3	-3.44%	1121.5	-2.24%	3252.4	-1.72%	10473.9	-0.29%
1978	655.8	-0.22%	1147.3	1.44%	3309.3	1.80%	10504.2	3.85%
1977	657.3	-3.51%	1130.9	-1.52%	3250.7	-0.83%	10114.4	0.58%
1976	681.2	-3.17%	1148.4	-1.48%	3277.9	-0.23%	10055.7	6.32%
1975	703.5		1165.6		3285.5		9457.7	
Average Annual % Change 1975 - 1983		-2.48%		-1.08%		-0.09%		1.59%

(Sources: Population is as indicated in data appendix following. Physician supply data are from Canada, Health and Welfare Canada (1983, 1984b; Table 21.15) for 1982 and 1983 respectively, and equivalent in earlier versions of the Canada Health Manpower Inventory for data up to 1981.)

[4] Of course we have made no attempt here to adjust for shifts over time in the relationship between numbers of physicians as reported by the RAMQ and full-time-equivalent physicians. But the magnitude of these trends is unlikely to be altered appreciably by any such refinements.

DATA APPENDIX - QUEBEC

Except where otherwise noted, data were drawn from the publication Statistiques Annuelles~~,~~ published by the Regie de l'Assurance-Maladie du Quebec. Specific references are therefore in the form SA83, Table F, p. 41, for example, which would imply that the data had been taken from the indicated Table and page in the 1983 edition of Statistiques Annuelles. Dates refer to title dates rather than dates of publication.

Table IV.1

Total Cost and Population are from SA83, Table F, p. 41 for 1979-83; from SA82, Table G, p. 48 for 1978; from SA79, Table N, p. 62 for 1975-77; from tables taken from the Rapport du Comite d'etude sur la remuneration des professionels de la sante du Quebec (1980), as kindly provided by Mr. Pierre Bergeron, Directeur, Direction de l'Evaluation des Programmes, Ministere des Affaires Sociales, Quebec~~,~~ for 1971-74. The Consumer Price Index is from Barer and Evans (1985), Table 8.

Table IV.2

The Quebec Fee Index is taken from Barer and Evans (1985), Table 8 (see that reference for original sources). Fee-adjusted cost per capita is then cost per capita from Table IV.1 divided through by this fee index.

Table IV.3

Base service and ancillary service (AC) costs per capita are computed as the product of nombre de contacts-patients (base services), and the respective costs per contact-patient (base service), from SA83, Tables F and G, p.41, for 1979-83; SA82, Tables G and H, p. 41, for 1978; and from Bergeron (see above) for 1971-77. Then the respective series are divided through by the Quebec fee index.

Tables IV.4 and IV.5

The number of ancillary services is computed as the product of base services (contacts-patients) and ancillary services per base service (nombre d'actes complementaires par contact-patient). Both are from the same sources as detailed above for Table IV.3.

Tables IV.6, IV.7 and IV.8

Costs and numbers for consultations, examinations and surgical procedures are from SA83, Tables 4 and 5, pp. 46-49 for 1979-83; SA82, Tables 5 and 6, pp. 63-66 for 1978; and from Bergeron (see above) for 1971-77.

Table IV.9

The number of fee-for-service physicians is from SA83, Table 3, p.44 for 1979-83; and from Bergeron (see above) for 1971-78. The data provided by Bergeron for this series are, however, identical to those from earlier editions of SA (e.g. SA75, Table 13, p. 35 contains the identical data for 1971-75).

Table IV.10

All series in this table are computed from data referenced above.

Chapter 5

The Super Natural (British Columbia) Experience

In Chapter IV we examined in some depth the experience of the province in which physician fees rose least over the period since 1971. This chapter continues our use of data taken largely from published reports of the respective provincial medical services plans, and the analyses here continue to be structured around the framework set out in Figure IV.1, with a focus on service-specific trends.

We devote this chapter to a look at the province on the 'other side' of the Canadian experience. While Quebec fees rose substantially less than those in any of the other provinces, at the same time, B.C. physicians were the only provincial group whose fees did better than general inflation over the period 1971-83. The reader may recall from Chapter 3 that this left B.C. physician fees some 30 percent higher than national average at the end of that period. There have been no general fee increases in B.C. since April 1983, but it is early yet to have published utilization data for the more recent years.

Because Chapter 3 concentrated on interprovincial comparative aggregate experiences, we make only occasional effort here to compare B.C., for example, with Quebec. Rather, the data presented here are structured to facilitate the examination of within-province utilization and supply responses to relative shifts in average service fees under the constraints of individual provincial fee schedules.

BRITISH COLUMBIA

Annual reports from the B.C. Ministry of Health (Department of Health until 1976) provide the requisite payment and services data, on a fiscal year basis, only since 1973/74. The service-specific detail was found only for the period back to 1974/75, and the most recently published annual report covers fiscal 1982/83. This provides an eight year stretch over which total fee-for-service expenditures on medical services increased 250 percent, or 200 percent per capita (Table V.1). With general Canadian prices inflating at about 9.7 percent per annum over this period, fee-based medical service cost per capita increased in real terms about 4.66 percent per annum for eight years, or 44 percent overall. This is in stark contrast to the Quebec experience (over the same period) of a 10 percent fall in real per capita costs.

In every year save one real per capita costs rose, and the single year of decline followed a massive one year increase of almost 17 percent (1975/76)[1]. From 1975/76 to 1980/81, growth was relatively moderate, averaging about 1.2 percent annually; then the two most recent years saw an aggregate 16.2 percent jump in real per capita costs.

Average fees rose over 15 percent in 1975/76. This turns out not to be the explanation, however, for the rapid increase in real costs per capita. In fact, Table V.2 shows that real fees rose only 3.9 percent,

Table_V.1

MEDICAL COSTS PER CAPITA,
BRITISH COLUMBIA, 1973/74 - 1982/83

Year	Total Cost ($,000)	% Change	Population (,000)	% Change	Cost per Capita	% Change	CPI	% Change	Real Cost per Cap.	% Change
1982-83	671,615	19.36%	2801.6	1.37%	$239.73	17.75%	2.625	10.81%	$91.32	6.27%
1981-82	562,664	26.23%	2763.7	2.58%	$203.59	23.06%	2.369	12.49%	$85.94	9.40%
1980-81	445,734	15.85%	2694.2	3.04%	$165.44	12.44%	2.106	10.15%	$78.56	2.08%
1979-80	384,736	13.99%	2614.8	2.16%	$147.14	11.58%	1.912	9.13%	$76.95	2.24%
1978-79	337,513	12.92%	2559.4	1.79%	$131.87	10.93%	1.752	8.96%	$75.27	1.81%
1977-78	298,900	11.32%	2514.3	1.84%	$118.88	9.31%	1.608	7.99%	$73.93	1.22%
1976-77	268,497	7.39%	2468.9	1.29%	$108.75	6.02%	1.489	7.51%	$73.04	-1.38%
1975-76	250,026	31.28%	2437.5	1.48%	$102.57	29.37%	1.385	10.80%	$74.06	16.76%
1974-75	190,452	19.32%	2402.0	3.53%	$79.29	15.25%	1.250	10.91%	$63.43	3.91%
1973-74	159,614		2320.0		$68.80		1.127		$61.05	
Average Annual % Change										
1974/75 - 1982/83		17.06%		1.94%		14.83%		9.72%		4.66%
1973/74 - 1982/83		17.31%		2.12%		14.88%		9.85%		4.58%

TABLE_V.2

FEE-ADJUSTED COST PER CAPITA, BRITISH COLUMBIA

Year	Real Cost per Cap.	% Change	Fee Index	% Change	Real Fees	% Change	Fee-adjusted Cost per Capita	% Change
1982-83	$91.32	6.27%	2.738	13.28%	1.043	2.23%	$87.55	3.94%
1981-82	$85.94	9.40%	2.417	16.99%	1.020	4.00%	$84.23	5.19%
1980-81	$78.56	2.08%	2.066	9.31%	0.981	-0.76%	$80.08	2.86%
1979-80	$76.95	2.24%	1.890	7.88%	0.988	-1.15%	$77.85	3.43%
1978-79	$75.27	1.81%	1.752	6.76%	1.000	-2.01%	$75.27	3.90%
1977-78	$73.93	1.22%	1.641	4.26%	1.021	-3.46%	$72.44	4.85%
1976-77	$73.04	-1.38%	1.574	11.08%	1.057	3.32%	$69.09	-4.55%
1975-76	$74.06	16.76%	1.417	15.11%	1.023	3.89%	$72.39	12.39%
1974-75	$63.43	3.91%	1.231	9.03%	0.985	-1.69%	$64.41	5.70%
1973-74	$61.05		1.129		1.002		$60.94	
Average Annual % Change								
1974/75 - 1982/83		4.66%		10.51%		0.72%		3.91%
1973/74 - 1982/83		4.58%		10.34%		0.45%		4.11%

the remaining 12.4% being increases in per capita utilization (fee-adjusted cost). This represents a one-year increase in excess of any found in the Quebec experience and, as we will see below, appears to have been fairly widely spread across types of service. Our inclination (as noted in footnote 1 above) is to suspect data problems in those earlier years, but the expenditure data on which this series is based were taken from the latest (1983) annual report.

The following year, 1976/77 represented a second consecutive year of significant gains for real fees (up again over 3 percent), and this time per capita utilization slowed significantly. Then we find four years of erosion in real fees, accompanied by four years of major increases in utilization per capita. Interestingly, each successive year shows less fee erosion than the previous, accompanied by slower growth in utilization than in the previous. The period 1980/81 to 1982/83 was one in which fees rebounded dramatically as a result of a two year agreement, effective April 1, 1981, calling for close to a 40 percent increase in fees over two years. Yet per capita utilization also increased sharply, up over nine-percent in the two years. Thus, in 1975/76 and in the period since 1980/81, the B.C. experience was one of growth in both real fees and utilization per capita. During the intervening years, increases in real fees were accompanied by declining per capita use, and vice versa.

Table V.3 disaggregates the final series in Table V.2, fee-adjusted cost per capita, by broad type of service. Here we note that in all years except 1977/78, growth in utilization per capita was most

TABLE_V.3

FEE-ADJUSTED COST PER CAPITA BY BROAD TYPE OF SERVICE, BRITISH COLUMBIA, 1974/75 - 1982/83

Year	Total	% Change	Gen. Prac. Exams & Visits	% Change	Specialist Cons. & Visits	% Change	Other Medical Services	% Change
1982-83	$87.55	3.94%	$31.88	4.01%	$14.04	7.71%	$41.64	2.68%
1981-82	$84.23	5.19%	$30.65	4.67%	$13.04	7.57%	$40.55	4.83%
1980-81	$80.08	2.86%	$29.28	2.75%	$12.12	6.05%	$38.68	1.98%
1979-80	$77.85	3.43%	$28.50	1.92%	$11.43	4.49%	$37.93	4.27%
1978-79	$75.27	3.90%	$27.96	4.18%	$10.94	4.84%	$36.37	3.41%
1977-78	$72.44	4.85%	$26.84	6.31%	$10.43	4.22%	$35.18	3.95%
1976-77	$69.09	-4.55%	$25.25	-3.63%	$10.01	-1.54%	$33.84	-6.08%
1975-76	$72.39	12.39%	$26.20	10.29%	$10.17	19.16%	$36.03	12.14%
1974-75	$64.41		$23.75		$8.53		$32.13	
Average Annual % Change								
1974/75 - 1982/83		3.91%		3.75%		6.43%		3.29%

pronounced for specialist consultations and visits (office and hospital). Overall growth in per capita use over the eight years was close to 6.5 percent per annum. A distant second was general practice examinations and visits, with other medical services (e.g., laboratory, anaesthesia, surgery, obstetrics) in aggregate growing at about half the specialist vist/consultation rate. The declining rate of growth from 1976/77 through 1980/81 was driven by general practice plus other services, with specialist consultation/visit utilization growth actually increasing over that period and continuing to increase right through 1982/83. Thus, the apparent turnaround in utilization growth in 1981/82 was not a specialist consultation/visit phenomenon; rather it reflected primarily a major increase in other medical services, which account for close to half of all utilization.

In Tables V.4 through V.6 we disaggregate each broad service category in turn into more detailed services, and disaggregate the fee-adjusted cost per capita series for each detailed service category into its component parts: number of services per capita vand relative cost per service. Thus in Table V.4 we have split general practice exams and visits out into complete exams; partial exams; house, out-of-office and emergency hours (HOOFE) visits; and hospital visits; and each of these into its service and cost components.

This table suggests that the overall growth in per capita general practice exams and visits is a product primarily of major and continuous increases in complete examinations, and secondarily of increases in HOOFE visits. But with the relative cost of HOOFE visits falling,

TABLE_V.4

GENERAL PRACTICE EXAMINATIONS AND VISITS

Year	Fee-adjusted Cost per Capita	% Change	Complete Exams # per Cap.	Complete Exams % Change	Partial Exams # per Cap.	Partial Exams % Change	Out-of-of Hours, House & Emerg. Visits # per Cap.	Out-of-of Hours, House & Emerg. Visits % Change	Hospital Visits # per Cap.	Hospital Visits % Change
1982-83	$31.88	4.01%	0.49	2.62%	3.14	3.36%	0.37	13.86%	0.54	-4.37%
1981-82	$30.65	4.67%	0.48	9.07%	3.04	1.04%	0.32	6.63%	0.57	0.53%
1980-81	$29.28	2.75%	0.44	5.14%	3.01	2.17%	0.30	0.81%	0.56	-4.27%
1979-80	$28.50	1.92%	0.42	3.57%	2.95	1.94%	0.30	2.20%	0.59	0.81%
1978-79	$27.96	4.18%	0.40	7.91%	2.89	2.39%	0.29	0.84%	0.58	-4.67%
1977-78	$26.84	6.31%	0.37	5.80%	2.82	3.81%	0.29	7.35%	0.61	-1.53%
1976-77	$25.25	-3.63%	0.35	0.76%	2.72	-3.94%	0.27	-4.00%	0.62	-6.45%
1975-76	$26.20	10.29%	0.35	20.83%	2.83	7.88%	0.28	7.82%	0.66	-0.59%
1974-75	$23.75		0.29		2.62		0.26		0.67	
Average Annual % Change										
1974/75 - 1982/83		3.75%		6.81%		2.29%		4.31%		-2.60%

	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change
1982-83	$12.74	0.29%	$5.93	-1.10%	$12.70	-1.23%	$4.26	10.84%
1981-82	$12.70	3.05%	$5.99	0.31%	$12.86	0.84%	$3.85	7.48%
1980-81	$12.33	-4.17%	$5.97	4.15%	$12.75	-4.90%	$3.58	-3.83%
1979-80	$12.86	-0.27%	$5.74	-0.03%	$13.41	-1.97%	$3.72	1.10%
1978-79	$12.90	2.83%	$5.74	2.12%	$13.68	-4.60%	$3.68	6.91%
1977-78	$12.54	1.99%	$5.62	1.98%	$14.34	0.37%	$3.44	4.91%
1976-77	$12.30	-0.68%	$5.51	-0.22%	$14.29	-0.84%	$3.28	1.41%
1975-76	$12.38	2.33%	$5.52	0.87%	$14.41	1.93%	$3.24	-0.39%
1974-75	$12.10		$5.47		$14.13		$3.25	
Average Annual % Change								
1974/75 - 1982/83		0.65%		1.00%		-1.33%		3.46%

TABLE_V.5

SPECIALIST CONSULTATIONS AND VISITS

Year	Fee-adj. Cost per Cap.	% Change	Consultations # per Cap.	% Change	Office Visits # per Cap.	% Change	Hospital Visits # per Cap	% Change
1982-83	$14.04	7.71%	0.42	4.80%	0.24	6.22%	0.28	2.58%
1981-82	$13.04	7.57%	0.40	3.34%	0.23	8.09%	0.27	5.52%
1980-81	$12.12	6.05%	0.39	2.56%	0.21	6.88%	0.26	-0.86%
1979-80	$11.43	4.49%	0.38	3.94%	0.20	1.24%	0.26	7.37%
1978-79	$10.94	4.84%	0.37	5.95%	0.20	4.30%	0.24	2.80%
1977-78	$10.43	4.22%	0.35	3.27%	0.19	9.16%	0.24	2.79%
1976-77	$10.01	-1.54%	0.34	-1.97%	0.17	0.03%	0.23	7.49%
1975-76	$10.17	19.16%	0.34	17.66%	0.17	14.70%	0.21	19.85%
1974-75	$8.53		0.29		0.15		0.18	
Average Annual % Change								
1974/75 - 1982/83		6.43%		4.82%		6.24%		5.79%

	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change
1982-83	$24.83	2.34%	$7.01	2.86%	$6.03	6.55%
1981-82	$24.26	2.78%	$6.81	4.89%	$5.66	4.81%
1980-81	$23.60	1.96%	$6.49	21.00%	$5.40	-1.38%
1979-80	$23.15	0.40%	$5.37	0.32%	$5.47	-0.73%
1978-79	$23.06	-0.58%	$5.35	0.46%	$5.51	-1.37%
1977-78	$23.19	0.42%	$5.32	0.45%	$5.59	0.55%
1976-77	$23.10	-1.32%	$5.30	1.69%	$5.56	-0.55%
1975-76	$23.40	1.40%	$5.21	3.01%	$5.59	-1.08%
1974-75	$23.08		$5.06		$5.65	
Average Annual % Change						
1974/75 - 1982/83		0.92%		4.15%		0.81%

TABLE_V.6

SELECTED OTHER MEDICAL SERVICES AND PROCEDURES

Year	Total Fee-adj. $ per Cap.	% Change	Anaesthesia # per Cap.	Anaesthesia % Change	Obstetrics # per Cap.	Obstetrics % Change	Surgery # per Cap.	Surgery % Change	Special Procedures # per Cap.	Special Procedures % Change
1982-83	$41.64	2.68%	0.906	0.75%	0.024	2.73%	0.212	8.29%	0.347	5.19%
1981-82	$40.55	4.83%	0.899	6.10%	0.024	1.90%	0.196	4.30%	0.330	7.05%
1980-81	$38.68	1.98%	0.847	0.30%	0.023	0.26%	0.188	-1.53%	0.308	-0.98%
1979-80	$37.93	4.27%	0.845	1.32%	0.023	3.27%	0.191	2.32%	0.311	4.81%
1978-79	$36.37	3.41%	0.834	6.45%	0.022	2.27%	0.186	2.25%	0.297	3.30%
1977-78	$35.18	3.95%	0.783	4.40%	0.022	0.56%	0.182	0.15%	0.288	5.12%
1976-77	$33.84	-6.08%	0.750	-9.04%	0.022	-0.56%	0.182	-4.57%	0.274	-3.63%
1975-76	$36.03	12.14%	0.825	13.03%	0.022	9.48%	0.191	10.45%	0.284	12.82%
1974-75	$32.13		0.730		0.020		0.173		0.252	
Average Annual % Change										
1974/75 - 1982/83		3.29%		2.74%		2.45%		2.60%		4.11%

	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change
1982-83	$4.27	-1.38%	$94.31	3.28%	$43.21	-6.15%	$10.72	-1.05%
1981-82	$4.33	-1.04%	$91.31	1.12%	$46.04	-2.30%	$10.83	0.81%
1980-81	$4.38	1.08%	$90.30	-3.00%	$47.13	-3.81%	$10.75	3.56%
1979-80	$4.33	1.98%	$93.09	0.44%	$48.99	-1.38%	$10.38	0.75%
1978-79	$4.25	-1.84%	$92.68	-2.22%	$49.68	-1.96%	$10.30	-1.60%
1977-78	$4.33	-0.20%	$94.79	-1.05%	$50.67	0.35%	$10.47	1.05%
1976-77	$4.33	-2.53%	$95.79	-5.72%	$50.49	-4.35%	$10.36	-1.15%
1975-76	$4.45	-0.73%	$101.61	-2.38%	$52.79	0.82%	$10.48	0.30%
1974-75	$4.48		$104.08		$52.36		$10.45	
Average Annual % Change								
1974/75 - 1982/83		-0.59%		-1.22%		-2.37%		0.32%

TABLE_V.6 (cont'd)

	X-ray		Laboratory		Common Office	Procedures	Psychotherapy		Electrodiagnosis	
Year	# per Cap.	% Change	# per Cap.	% Change	# per Cap.	% Change	# per Cap.	% Change	# per Cap.	% Change
1982-83	0.479	2.54%	3.67	2.78%	0.502	5.12%	0.090	3.21%	0.046	18.95%
1981-82	0.467	0.65%	3.57	3.71%	0.478	4.41%	0.087	-5.29%	0.039	22.12%
1980-81	0.464	-0.38%	3.44	5.93%	0.458	-4.26%	0.092	14.01%	0.032	25.32%
1979-80	0.466	-1.30%	3.25	7.38%	0.478	0.28%	0.081	1.84%	0.025	37.78%
1978-79	0.472	0.66%	3.03	11.10%	0.477	-3.10%	0.079	6.50%	0.018	46.69%
1977-78	0.469	-2.03%	2.72	10.13%	0.492	-1.71%	0.075	-4.68%	0.012	96.39%
1976-77	0.479	-4.31%	2.47	0.43%	0.500	-6.46%	0.078	-10.51%	0.006	-5.92%
1975-76	0.500	11.31%	2.46	18.40%	0.535	6.71%	0.087	3.67%	0.007	12.88%
1974-75	0.450		2.08		0.501		0.084		0.006	
Average Annual % Change										
1974/75 - 1982/83		0.80%		7.35%		0.02%		0.84%		29.01%

	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change
1982-83	$10.77	-2.29%	$3.07	-0.04%	$4.06	3.73%	$22.45	3.83%	$29.49	0.72%
1981-82	$11.03	-0.25%	$3.08	0.89%	$3.92	7.06%	$21.62	14.41%	$29.27	1.35%
1980-81	$11.06	3.01%	$3.05	6.70%	$3.66	-4.79%	$18.90	-8.85%	$28.89	-0.28%
1979-80	$10.73	-0.41%	$2.86	2.46%	$3.84	2.83%	$20.74	-0.50%	$28.97	2.12%
1978-79	$10.78	0.68%	$2.79	-4.22%	$3.74	1.52%	$20.84	-0.04%	$28.36	4.08%
1977-78	$10.70	0.69%	$2.91	-0.39%	$3.68	0.64%	$20.85	6.80%	$27.25	16.23%
1976-77	$10.63	-2.12%	$2.92	1.42%	$3.66	-0.52%	$19.52	3.24%	$23.45	1.80%
1975-76	$10.86	0.06%	$2.88	3.73%	$3.68	1.09%	$18.91	4.59%	$23.03	6.22%
1974-75	$10.85		$2.78		$3.64		$18.08		$21.68	
Average Annual % Change										
1974/75 - 1982/83		-0.09%		1.27%		1.39%		2.74%		3.92%

partial exams were the second largest contributor to growth in fee-adjusted cost per capita (3.3 percent average annual vs 2.9 percent for HOOFE visits). Thus, in 1974/75 the ratio of fee-adjusted cost per capita for partial relative to complete exams was about 4:1. By 1982/83 this ratio was 3:1. So the driving force has been complete exams. This is nowhere more evident than in the 1975/76 utilization boom, when per capita complete exam rates apparently rose over 20 percent!

The other general trends of interest in this table are those for hospital visits. We find major increases in the relative average cost of a general practice hospital visit, and a corresponding sharp drop in number of visits per capita. However, the explanation for the drop in visit rate is more complex than simply fee-driven practitioner response. First, the number of acute care beds per 1,000 population in B.C. public general hospitals fell from 5.9 in 1974 (Statistics Canada (1976), Table 11, p.62; see appendix for population data sources) to 5.6 in 1982/83 (Statistics Canada (1984), Table 2A, p.23). But, second, general practitioners are not the only physicians making hospital visits and, as Table V.5 indicates, specialists were clearly not slowing their visit rates. The drop in general practitioner hospital visit rates undoubtedly reflects some combination, then, of reduced overall hospital capacity per capita, reduced availability/use of hospital capacity to/by general practitioners, relative to specialists, and possibly some response to the sharp increase in relative fees. Certainly the 11 percent relative fee increase in 1982/83 is accompanied by a sharp drop in visits per capita, and mirrors the relationship of 1978/79. But in 1980/81 an almost 4 percent fall in relative cost was accompanied by a 4 percent drop in per capita visits.

Apparent single year relationships within the other types of services project equally mixed signals. The HOOFE visit rate was up sharply in 1982/83 as relative prices fell by about 1.2 percent. But in each of 1978/79 and 1980/81 when relative costs fell much more sharply, utilization also fell off relative to previous years. Of course there is likely to be a distinction in utilization responses between overall responses and responses within and between types of services. For example, an overall finding of increased utilization as partial response to a drop in real fees would be completely consistent with a finding, say, of lowered HOOFE rates in response to a drop in relative fees for that type of visit. The global response, where it exists, will be some part increased general utilization, another part a shift in mix of services.

Looked at from this perspective, and leaving aside the hospital visit experience, we find in 1975/76 the largest relative cost increase for complete exams accompanied by the sharpest growth in complete exam rates, and a similar relationship in 1978/79 and 1981/82. But the complete opposite occurred in 1977/78, for example, when HOOFE visits showed the smallest change in relative fees but the largest increase in use rates. Similarly, 1980/81 appears to have been a year of major reshuffling of relative fees or shifts in mix within service categories. Yet the category that gained substantially on the cost per service side (partial exams) was well below complete exams (the relative cost of which fell 4 percent) in rate of utilization increase. There is, then, no apparent unified story here at the level of groups of services provided by a class of practitioners.

For specialist consultations and visits (Table V.5), it has been office visits other than initial consultations that have driven fee-adjusted costs per capita. Not only have office visits per capita increased faster than either consultations or hospital visits, but relative average fees for office visits have increased dramatically in that category, primarily due to a 21 percent increase in average costs, (over and above the 9 percent general fee increase!) in 1980/81. Consultations and hospital visits showed little aggregate eight year shift in average cost, but rates of per capita utilization growth were still substantial. As noted earlier, the shrinking per capita public general hospital bed capacity appears to have had little effect on specialist hospital visit rates.

The 1975/76 boom in fee-adjusted costs per capita was relatively evenly spread across the three specialist visit categories. Since 1976/77, the rate of growth in that series has been continuously increasing with the minor exception of 1979/80. No single service category takes major responsibility, with consultations behind the fall in 1976/77, then office visits leading the growth in 1977/78, consultations in 1978/79, and hospital visits in 1979/80. But since 1979/80 the over 6 percent growth per year has been driven by the dramatic growth both in relative cost of, and per capita use of, office visits. The fee-adjusted cost of specialist office visits per capita rose 56 percent in three years!

As for relationships between relative fees and use rates, again we get mixed signals. However, the single major event within specialist visits was undoubtedly the 30 percent increase over three years (1979/80

- 1982/83) in the relative average cost of office visits. This was accompanied by an increase of 23 percent in number of visits per capita over the same period, and that rate of growth is the highest among the common types of service (electrodiagnosis being the only category to show faster utilization growth). Other than that period for office visits, we are confronted with relatively trendless combinations of cost and use changes. Consultations, for example, show two years of falling relative fees (1976/77 and 1978/79). In one, the fall in cost is accompanied by the only decline in per capita use; in the other, it is accompanied by the second largest single year increase in use for that service category. The relative cost of hospital visits rose sharply in the most recent two years, and utilization was also up. But two of the previous three years of relative cost decline were also accompanied by sharply higher utilization; and so it goes.

The disaggregation of other medical services and procedures in Table V.6 is virtually exhaustive ($40.90 of the $41.64 in 1982-83 fee-adjusted costs per capita is accounted for by the nine categories included). But the annual reports provide no descriptive documentation so that, for example, we cannot tell precisely what fee items fall into special procedures, and there is no explanation offered for the dramatic growth in electrodiagnostic procedures. The trend for that category has every appearance of the 'new technology' utilization phenomenon. Those limitations aside, however, the table is rather revealing.

Recall from Table V.3 that growth in fee-adjusted costs per capita for 'medical services and procedures' other than general practice and specialist consultations, exams and visits was the slowest among the three broad categories, at 3.3 percent per annum. It is also important to bear in mind that, where as the types of service within each of the previous two tables were to some extent substitutes for each class of physician, many of the categories of service in Table V.6 are generally not substitutable among themselves. In fact, a number of the services in this table are provided only by a relatively small group of practitioners. Thus, obstetric services will be the domain of general and family practitioners and obstetricians, psychotherapy within the ambit of psychiatry. In contrast surgery will encompass services provided by general practitioners, general surgeons and all the surgical specialties. The diagnostic services (lab, x-ray, electrodiagnosis, common office procedures, special procedures) may represent classes of service with some substitute potential, for certain practitioners, but on the whole the lack of inter-class substitutability distinguishes this table. That is not to say that substitution does not occur within a class of services. This, of course, manifests as part of shifts in average fee-adjusted cost per service.

Of the service categories included in Table V.6, laboratory services accounted for 27 percent of total fee-adjusted cost per capita in 1982/83, and laboratory and surgery combined represented half the costs of these other services and procedures. The only other category representing more than 10 percent of total was x-ray. The most striking feature of this table is, as noted above, the growth in electrodiagnostic servicing, particularly the doubling from 1977/78 to 1978/79. A check of the respective annual reports revealed no explanation. It is worth noting that the rate of growth has declined monotonically since 1977/78, and we would suspect either the introduction of new procedures, a change in the MSP payment policy for certain procedures (which, for example, may not have been covered benefits prior to 1976/77) or a combination of the two. Following that line of speculation, it is interesting to note that the rate of growth in the average fee-adjusted cost per electrodiagnostic service was exceeded only by that for specialist office visits (Table V.5). More specifically, the 96 percent increase in number of services in 1977/78 came during the year in which there was a 16 percent increase in the average fee-adjusted cost per service. Again this is suggestive of new billable items.

Leaving aside the enigma of electrodiagnosis, which is after all still a minor item among these service categories in absolute terms, we note the rapid growth in provision of laboratory services as well as a shift toward a more expensive mix of such services. (Since laboratory services received no special fee increases over and above average during this period, the growth in average cost is a shift in service mix). In 1974/75, lab services accounted for only 18 percent of total (versus 27 percent in 1982/83). Little wonder then, that the laboratory sector has been a major Ministry concern for a number of years now.

After electrodiagnosis and laboratory services, psychotherapy and special procedures show the largest overall growth in cost per capita. For the former this resulted primarily because of major increases since 1979/80. Interestingly, a nine percent drop in relative cost in 1980/81 was accompanied by a 14% increase in provision. The following year, when the relative fees recovered the nine percent and an extra five, utilization per capita fell five percent. Major inceases in relative cost form 1975/76 to 1977/78 were also accompanied by declines in servicing. For special procedures, the growth was largely utilization-driven, with increases of over 3 percent per capita in six of the eight years. There is no apparent relationship here between relative cost and utilization. As a final note on the data in this table, the trend in surgery has been toward increasing provision of lower cost services. Relative costs have declined virtually continuously over this period, with the rate of decline accelerating more recently. This has been accompanied, at least in the most recent two years, by sharply higher rates of service. Where limited scope for substitutability exists, but fees are held down, there appears once again to be some utilization response.

With Table V.6 we conclude our examination of B.C.'s experience from the perspective of numbers of services and costs per service. The final table in this chapter, Table V.7, provides the view from the third perspective, that of the providers. Physician supply has shown relentless growth, with population per physician falling in every year save one, and falling an average 1.6 percent per year. Fee payments per practitioner submitting at least one paid claim to the Medical Services Plan have risen sharply, up by 13 percent per year and, in stark contrast to the plight of the Quebec physician (Table IV.9), real payments per practitioner rose sharply over this period. Thus, even in the knowledge that the series are not likely to be strictly comparable because of differences in physician inclusions, it is sobering to note that a $6,000 gap in real per physician payments (in favour of the B.C.

TABLE_V.7 EXPENDITURE AND UTILIZATION PER PHYSICIAN, B.C.

Year	# of MDs Billing MSP	% Change	Fee Payments per MD	% Change	Real Fee Payments per MD	% Change	Fee Index	% Change	Fee-adj. Payments per MD	% Change	Population per MD	% Change
1982-83	4981	3.13%	$134,835	15.74%	$51,366	4.46%	2.738	13.28%	$49,246	2.18%	562.5	-1.70%
1981-82	4830	2.31%	$116,494	23.38%	$49,174	9.69%	2.417	16.99%	$48,198	5.47%	572.2	0.26%
1980-81	4721	4.66%	$94,415	10.70%	$44,832	0.50%	2.066	9.31%	$45,700	1.27%	570.7	-1.55%
1979-80	4511	4.71%	$85,288	8.86%	$44,607	-0.25%	1.890	7.88%	$45,126	0.91%	579.6	-2.43%
1978-79	4308	3.21%	$78,346	9.41%	$44,718	0.41%	1.752	6.76%	$44,718	2.47%	594.1	-1.37%
1977-78	4174	1.98%	$71,610	9.16%	$44,534	1.08%	1.641	4.26%	$43,638	4.71%	602.4	-0.14%
1976-77	4093	4.31%	$65,599	2.95%	$44,056	-4.24%	1.574	11.08%	$41,677	-7.32%	603.2	-2.89%
1975-76	3924	4.45%	$63,717	25.69%	$46,005	13.44%	1.417	15.11%	$44,966	9.19%	621.2	-2.84%
1974-75	3757		$50,693		$40,554		1.231		$41,180		639.3	
Average Annual % Change												
1974/75 - 1982/83		3.59%		13.01%		3.00%		10.51%		2.26%		-1.59%

physician) in 1974, had grown to $26,000 by 1982!

Even more remarkable is the fact that from 1974 to 1982, physician fees in B.C. rose 10.5% per annum in B.C., over twice the 4.9 percent in Quebec. Yet service provision (fee-adjusted payments) per physician in B.C. rose 2.26 percent per year, while that in Quebec was virtually unchanged (up 0.7 percent per year) over the comparable eight year period. The faster population growth in B.C. (population per physician falling 1.6 percent per year in B.C., 2.4 percent in Quebec over the 1974-82 period), falls far short of being sufficient to explain that faster utilization growth.

Unfortunately our B.C. record goes back only two years into the pre-fee-restructuring era in Quebec. But over the short 1974/75 - 1976/77 period, when B.C. fees were rising 28 percent while Quebec's rose one percent, service provision per physician rose 10 percent in Quebec, one percent in B.C. Thus, it would appear once again that the utilization story has two parts, one being relative fees, the other the degree of policy control over billing activity represented by the design of fee schedules.

The Great B.C. Physician Fee 'Gift' of 1982

In April of 1981, B.C. physicians were awarded a two-year contract calling for average increases to medical fees of 20% in the first year (14.5% on April 1, and a non-compounded 8.3% on August 1, 1981), and a further 14% compounded on top of the 1981 total of 22.8%, effective

April 1, 1982. Then in the early summer of 1982, as part of a broad provincial initiative of public sector restraint, the Ministry of Health approached the medical profession in search of some relief from the 14% 1982 increase.

The result of a protracted series of backroom negotiations (within the profession as well as between the Ministry and the profession) was an agreement by the medical profession to make a gift of a 7% temporary reduction in fees (not to affect the fee base) for the remainder of the 1982/83 fiscal year. In fact, radiology fees were reduced by 6 percent, pathology by 5% and all other medical and surgical fee items by 7%, for the period September 1, 1982 through March 31, 1983.

This affords a rare opportunity to examine trends in utilization in response to a *ceteris paribus* fee reduction. While a detailed multivariate, specialty and fee-item specific analysis is well beyond the scope of the present report (and is, in any case, the subject of a separate study), we can provide a 'back of the envelope' evaluation of this policy's impact, with little more than the data presented to this point.

Total costs in 1981-82 (Table V.1) were $562.7 million. If one assumes linear overlay of the 1982/83 population growth of 1.37 percent (also Table V.1), this implies that 1982-83 population would have incurred costs of $570.4 million. But the average fee level for services paid in 1982/83, taking into account the fee rollback, was about 13.3 percent higher than in 1981/82, so that 1981/82 utilization rates for the 1982/83 population paid at 1982/83 fee levels would have amounted to $646.3 million. But over and above population and fee growth, B.C.'s population had for some years been increasing its per capita use of services (Table V.2). Even setting aside the 1981/82 blip of 5.2 percent increase, utilization increases per capita averaged about 3.8 percent per annum over the 1976/77 - 1980/81 period. In the absence of the fee rollback, and given the abrupt jump in utilization in 1981/82 concurrent with the major fee increase, a 3.8 percent increase in per capita utilization would seem a reasonable assumption for 1982/83. Applying the 3.8 percent increase to the 646.3 million yields, somewhat miraculously, a figure of $670.8 million. The reader may note that actual costs in 1982/83 were $671.6 million. This leaves very little room for any 'rollback effect'.

A cursory look at Tables V.1 through V.7 provides no evidence of anything 'special' happening in 1982/83. Utilization increases per capita were high but not unusually high, and 1982/83 was, anyway, a year of significant increase in per capita supply of physicians after a one year halt to that trend. The only specific services (Tables V.4 through V.6) that would appear to be candidates for closer scrutiny are general practice out-of-office hours, house and emergency visits, surgery rates and, perhaps, specialist consultations. There certainly warrant further study, but the brief analysis above suggests that for each such service, there was one in which use rates were lower than might have been anticipated.

This finding, preliminary though it is, should not come as a particular surprise at this point in the present study. The 'gift' was not a long term real fee base reduction, such as that experienced in Quebec. In fact, even with the rollback B.C. physicians made real fee gains in 1982/83 because inflation was turning down, and these gains were coming on top of major relative gains in 1981/82. Furthermore, while a seven percent fee reduction seems at first blush to be punitive, in fact it was in effect for only seven months. Thus, on an annualized basis this becomes about 4 percent, and when tax reduction implications are taken into account that falls into the 2-3% range. This is a far cry from the Quebec experience and, in fact, is in effect a 13% increase instead of a 17% increase in the face of about 11% general inflation.

But overriding this empirical evidence is a theoretical uncertainty. How might one expect the practitioner population to react to a temporary reduction in fees? To the extent that there is discretion in hours of work, an income target hypothesis would suggest we might expect increased utilization. A conventional upward sloping supply curve would predict reduced utilization. Because the reduction was temporary, even income target behaviour may not be instantaneous. It is far easier to make up lost income when fees return to pre-rollback levels. We seem to find no effect, or some balancing of the two. Either way, this was not a large price movement, and in the longer run B.C. scheme of things, should not have been expected to create any particular utilization discontinuty.

SUMMARY

British Columbia physicians fared relatively very well over the period 1974/75 - 1982/83, gaining fee increases averaging 10.5 percent per year, or 0.7 percent per year relative to general inflation. In this, they were the only Canadian physicians keeping ahead of inflation. The period was also one in which the potential supply of patients per physician feel about 1.6 percent per year. But services per capita rose far in excess of what would have been required to hold service provision per physician constant (3.9 percent per year), leaving service provision per physician up 2.3 percent per year.

Major service-specific increases were found for complete examinations by general practitioners (fee-adjusted cost per capita up 7.5 percent per annum), specialist office visits (up 10.7 percent per annum), hospital visits by specialists (6.7%) and laboratory services (8.7%).

Thus, while the fee experience in B.C. was very different from that in Quebec, the differences between the two provinces in utilization experience seem more closely related to fee schedule restructuring than to relative fees. A liberal fee policy is certainly no guarantee of tempered utilization, at least in an environment of rapidly growing physician supply.

FOOTNOTES

1. Despite our use of accrual-based expenditure data (see data appendix), at the end of this analysis we still find ourselves uneasy with the 1975/76 data. It is true that fees in 1975/76 were over 15 percent higher than those in 1974/75. However, this leaves almost half the increase in cost per capita unexplained by price changes. As we see below in our detailed analysis of utilization, there is a peculiar, or at least unexplained one-year boom in most of the service-specific utilization measures in this year (for example, the number of complete general practice exams per capita ostensibly rose almost 21 percent in a single year). The 1976 *Annual Report* notes that "during the year a significant improvement was made in the speed with which fee-for-service accounts were paid ..." (p.J126), but this provides no explanation for increases of this magnitude in *accrual* data. The reader is advised, then, to treat single year rates of change for the period 1974/75 - 1976/77 with some caution.

DATA APPENDIX - BRITISH COLUMBIA

All cost and utilization data were gathered from issues of the Ministry (or earlier, Department) of Health Annual Reports. They are denoted below by year of title, e.g. AR78 is the 1978 Annual Report, published in 1979, containing the relevant data for fiscal year 1977/78.

The detailed service-specific data were available only on a cash (date of payment) basis. However, such data are naturally sensitive to the number of pay periods in a fiscal year. In particular, "as 25 payments were made in 1976/77, 23 in 1977/78 the figures....are not truly comparable" (AR78,p.146). But AR83 provides a table (p.8) containing fee-for-service expenditure totals dating back to 1972/73, prepared on an accrual basis. In the interest of preparing time series data that we could analyze with some confidence, we adopted this accrual-based series as representing total expenditure, and then scaled all utilization data up or down by the ratio of total accrual to cash payments in each year. Thus, we maintained average cost per service as implied by the cash-based data, and simply made the assumption that the mix of services represented by the difference between cash and accrual expenditures would be identical to the cash-based reported mix of services.

Table V.1

Total cost is from AR83, p.8. Population for 1977 through 1982/83 is from Statistics Canada (1984), Appendix B, p.127, as of October 1. For earlier years it is as of July 1, from various issues of the

Canadian Statistical Review. The consumer price index (CPI) is taken from Barer and Evans (1985), Table 8. Real Cost per capita is total cost divided by the product of population and the CPI (based at 1971=1.0).

Table V.2

The fee index is again from Barer and Evans (1985), Table 8, with a modification to the figure for 1982-83 based on a more detailed analysis of fee changes associated with the fee 'giveback' of 1982/83. In particular, the 13.3 percent increase for 1982/83 takes account of the fact that an 8.3 percent increase awarded to B.C. physicians in August 1981 (and incorporated within the fee index in the above source), turns out on closer examination not to have been granted to radiology and pathology fee items. These items together represent just under 20 percent of total payments in 1981/82 and 1982/83. Fee-adjusted cost per capita is real cost per capita divided by the real fees index.

Table V.3

For each type of service, total costs were taken from the sources below and adjusted as described above to account for the discrepancies in the cash-based figures. The resulting total costs were divided by population and the B.C. fee index. General practice exams and visits is the sum of general practitioner complete exams, partial exams, subsequent office visits, night and other non-office hours visits, house visits and hospital visits, from AR83, p.10 for 1981/82 and 1982/83;

AR82, p.18 for 1980/81; AR81, p.19 for 1979/80; AR80, p.196 for 1978/79, AR79, p.237 for 1977/78; AR78, p.146 for 1976/77; AR77, p.G129 for 1975/76; AR76, p.J130 for 1974/75. Specialist consultations and visits is the sum of consultations, house visits, office visits and hospital visits, from the same sources. Other medical services is the aggregation of the remaining services from each of the tables referenced above (e.g. surgery, laboratory, obstetrics, etc; see Table V.6 for the detailed categories).

Tables V.4, V.5 and V.6

For each year the data were taken from the tables referenced above for Table V.3. Over-all fee-adjusted cost per capita, and number of services per capita for each specific service were estimated by applying the accrual/cash adjustment described earlier. Fee-adjusted cost per service was computed as total payments divided by total services (both taken directly from the sources referenced for Table V.3), divided in turn by the fee index. In Table V.4, partial exams represents the sum of partial exams and subsequent office visits; this aggregation was necessitated by a fee schedule restructuring in 1980 that had the effect of moving most of what had been classified as subsequent office visits into the partial exams category. We do not believe any discontinuity is created in the partial exams series. In Table V.5, house visits are not reported, but represent less than one percent of specialist consultations and visits. Similarly, the Table V.6 disaggregation does not include pulmonary function and other miscellaneous items totalling about 1.7 percent of total other medical service payments in 1982/83 and 3 percent in 1974/75.

Table V.7

The number of medical practitioners receiving any fee for service payments from MSP was gathered by passing the medical practitioner service profile tapes for each fiscal year. This series is then practitioners paid fee for service in each year, not practitioners providing some service in each year, although the differences are likely to be small. The figure arrived at for 1978/79 based on the relevant tapes seemed incorrect (4,192), being very little different from the 1977/78 figure. It turned out that the difference between the 1977/78 figure of 4,174 and the 1979/80 figure of 4,511, being 337, was virtually identical to the difference in the number of active civilian physicians (excluding interns and residents) in the respective years, taken from Canada (1984), Table 21.3 (1977-4,278; 1978-4,413; 1979-4,616, for a two year difference of 338). Accordingly, the figure in Table V.6 is an interpolation of our 1977/78 and 1979/80 figures using linear prorationing based on the active civilian physician series.

Chapter 6

Selected Other Provincial Experiences

This is the last of the chapters containing detailed province-specific analyses of respective medical plan service data. In this chapter we analyse data from published reports of the Manitoba Health Services Commission and the Saskatchewan Medical Care Insurance Commission respectively. As was the case with B.C. and Quebec, neither data set could be adopted without recourse either back to the provincial commission in question (Saskatchewan) or to some creative data manipulation (Manitoba) in order to smooth what appeared to be major reporting discontinuities.

The data from these two provinces are not generally comparable. Expenditures and expenditures per capita are the exception, although even the latter are likely to be uninformative because of differences in provincial age and sex mix. But at the level of individual service categories, where practitioner or service classifications vary, or even for 'per practitioner' statistics where the mix of activity levels among the included practitioners may be quite different in the two provinces, interprovincial comparisons are likely to do more harm than good. Again, then, we reiterate our emphasis on intertemporal experiences within each province.

MANITOBA

In chapter 3 we noted that Manitoba was one of the provinces where, unlike B.C. and Quebec, output or service provision per physician was relatively stagnant during the 1970's and early 1980's, despite this province's being within the group experiencing about a 20 percent drop in real fees since 1971. Thus, Manitoba was one of two provinces (P.E.I. being the other) in which real fee erosion of about 20 percent was accompanied by virtually stagnant output per physician. In the tables and discussions below we take a closer look at that experience.

The first column in Table VI.1, the total cost series, requires some elaboration. For the years 1971, and 1974 through 1978/79, these data were taken directly from Annual Statistics published by the Commission (detailed references appear in the data appendix). But commencing with 1979/80, the published data were converted from a date of service to a date of payment basis (Manitoba Health Services Commission, Annual Statistics 1979/80, Table 1, p. 28, fn 3). Furthermore, "in 1979/80 payments to physicians were accelerated by approximately two weeks through a change in claims processing procedures" (ibid.). Of course the latter point only becomes an issue because of the former. Nevertheless, the effect is marked. Published data show a drop in the number of services provided in 1980/81 relative to 1979/80, and only a 6 percent increase in payments despite an 11 percent increase in fees. It is possible that the date-of-service/date-of-payment transition alone would not have created any marked discontinuity. But the combination of this changeover and the speed-up in claims processing seemed to make prudent the separate reporting of average annual rates of change for the periods 1971-78/79, and 1980/81-1983/84.

Of course this splitting of periods does not address the claims

Table_VI.1

MEDICAL COSTS PER CAPITA
MANITOBA, 1971 TO 1983/84

Year	Total Cost ($,000)	% Change	Population (,000)	% Change	Cost per Capita	% Change	CPI	% Change	Real Cost per Cap.	% Change
1983/84	$166,504	8.89%	1051.1	1.08%	$158.41	7.73%	2.776	5.75%	$57.06	1.87%
1982/83	$152,904	15.40%	1039.9	1.18%	$147.04	14.06%	2.625	10.81%	$56.01	2.94%
1981/82	$132,495	19.89%	1027.8	0.29%	$128.91	19.54%	2.369	12.49%	$54.42	6.27%
1980/81	$110,511	10.33%	1024.8	-0.01%	$107.84	10.35%	2.106	10.15%	$51.20	0.18%
1979/80	$100,160	12.28%	1024.9	-0.43%	$97.73	12.76%	1.912	9.13%	$51.11	3.33%
1978/79	$89,204	7.88%	1029.3	0.07%	$86.66	7.80%	1.752	8.96%	$49.47	-1.06%
1977	$82,689	9.56%	1028.6	0.69%	$80.39	8.81%	1.608	7.99%	$49.99	0.76%
1976	$75,473	14.09%	1021.6	0.65%	$73.88	13.35%	1.489	7.51%	$49.62	5.43%
1975	$66,153	8.90%	1015	0.30%	$65.18	8.58%	1.385	10.80%	$47.06	-2.01%
1974	$60,748		1012		$60.03		1.250		$48.02	
1973		5.38%	998	0.77%		4.58%	1.127	7.72%		-2.92%
1972			992				1.048			
1971	$51,911		989		$52.49		1.000		$52.49	

Average
Annual
% Change

1971-1983/84	10.20%	0.51%	9.64%	8.88%	0.70%
1971-1978/79	8.04%	0.57%	7.43%	8.34%	-0.84%
1980/81-1983/84	14.64%	0.85%	13.68%	9.64%	3.68%

processing change directly. We chose in addition to recreate payment and service series as if there had been no acceleration in claims processing. This adjustment took the form first of scaling all series for 1979/80 down by a factor of 1/26 (two weeks). Then these two weeks of payments and services were added to the 1980/81 data, after two weeks of that year had been passed on; and so on. Thus for 1983/84, total cost was estimated at:

$$TC^{*}_{1983/84} = (25/26)\,(TC_{1983/84}) + (1/26)\,(TC_{1982/83}).$$

where the * denotes adjusted data. This has the effect of simply shifting one-twenty-sixth of 1979/80 payments into 1980/81, where we assume they would have been processed in the absence of the accelerated processing. For subsequent years it amounts to substituting two weeks of payments from the immediately preceding year for two weeks of payments actually made during the year in question. All service counts were adjusted similarly, so that costs per service implied by the published data were maintained. The result is a considerably less implausible data set. Furthermore, we have no reason to doubt the veracity of the overall period trends or, for that matter, year to year changes outside the two years 1978/79 through 1980/81. Even so, we attempt no interpretive analysis of the individual year experiences from 1978/79 to 1980/81 in the discussion that follows.

Total costs are for all medical services provided to residents of Manitoba by physicians in Manitoba. It was unclear from the footnoting in the annual reports whether a small (less than 1 percent) component of these costs represented non-fee payments, but in any event this inclusion would not affect the rates of change to any significant extent. Total costs rose 220 percent over the twelve years 1971 -

1983/84, while the CPI was increasing 178 percent. With population growth in the province totalling only 6.3 percent over the same period, real cost per capita rose 0.7 percent per annum or 8.7 percent overall (Table VI.1). This was on a scale more in keeping with the Quebec experience than with that in B.C.

But there was also a marked difference between the pattern of the 1970's, and that which appears to be unfolding in the 1980's. From 1971 to 1978/79, real cost per capita actually fell almost 1 percent per year; since 1980/81, that figure has been growing almost 3.7 percent per annum.

This difference is shown in Table VI.2 to be largely a fees phenomenon. The fee-adjusted cost per capita series shows the two periods with quite comparable utilization experiences. The 'smoothing' in moving from real to fee-adjusted cost per capita is the result of the pattern for real fees - down an average 3.5 percent per annum for seven years to 1978/79, largely because of 5+ percent yearly erosion in the period 1971 through 1975; then holding and in fact making slight gains since 1979/80. Overall, real fees were down almost 2 percent per annum, but some lost ground was made up by Manitoba physicians in the early 1980's with consecutive fee increases of 11.3, 14.8 and 11.6 percent.

The data in Table VI.2 also suggest that our adjustment to the cost data for 1979/80 and 1980/81 was a touch shy of providing an accurate transition. It is possible, but not likely, that per capita utilization rose 4.6 percent in 1979/80, then fell 0.9 percent in 1980/81, only to

Table_VI.2 FEE-ADJUSTED COST PER CAPITA, MANITOBA

Year	Real Cost per Cap.	% Change	Fee Index	% Change	Real Fees	% Change	Fee-adjusted Cost per Cap.	% Change
1983/84	$57.06	1.87%	2.265	5.06%	0.816	-0.61%	$69.94	2.55%
1982/83	$56.01	2.94%	2.156	11.59%	0.821	0.61%	$68.20	2.21%
1981/82	$54.42	6.27%	1.932	14.80%	0.816	2.13%	$66.72	4.14%
1980/81	$51.20	0.18%	1.683	11.31%	0.799	1.01%	$64.07	-0.87%
1979/80	$51.11	3.33%	1.512	7.85%	0.791	-1.13%	$64.63	4.56%
1978/79	$49.47	-1.06%	1.402	5.33%	0.800	-3.38%	$61.81	2.35%
1977	$49.99	0.76%	1.331	6.99%	0.828	-0.84%	$60.40	1.70%
1976	$49.62	5.43%	1.244	9.12%	0.835	1.46%	$59.39	3.88%
1975	$47.06	-2.01%	1.140	5.07%	0.823	-5.18%	$57.17	3.34%
1974	$48.02		1.085		0.868		$55.33	
1973		-2.92%	1.024	1.95%	0.909	-5.36%		2.58%
1972			1.024		0.977			
1971	$52.49		1.024		1.024		$51.26	

Average Annual % Change		% Change		% Change		% Change		% Change
1971-1983/84		0.70%		6.84%		-1.87%		2.62%
1971-1978/79		-0.84%		4.59%		-3.47%		2.71%
1980/81-1983/84		3.68%		10.41%		0.70%		2.96%

rise again 4.1 percent in 1981/82. This is somewhat suspect when one notes that this leaves 1979/80 and 1981/82 with the highest annual rates of growth, and 1980/81 with the only decline and with the lowest 'growth' by a wide margin. There is every indication that our adjustment failed to transfer enough of the 1979/80 costs into 1980/81, but published data provide no indication as to other possible adjustments.

Table VI.3 provides the disaggregation of real servicing per capita into its broad practitioner/type of service categories. We note that the slide in fees in the early 1970's was accompanied by rates of increase for general practice consultations and visits faster than in any of the later years. From 1971 through 1974, when there were virtually no fee increases, these general practice services were increasing almost 6 percent per capita per annum. Growth has averaged a slower but still considerable 3 percent since 1974. Specialist consultations and visits show the same overall pattern - faster growth in the 1971 - 1978/79 period - but at a lower level and with marked intra-period differences. Here the major growth came from 1975 to 1978/79, averaging 3.4 percent per capita per annum. The pattern for other services (surgery, obstetrics, laboratory, etc.) is different again, with very little growth in the early 1970's, rapid increases through the second half of the decade, but even faster growth in the early 1980's. Utilization per capita increased about 3.7 percent per annum from 1980/81 to 1983/84, in contrast to 1.7 percent over the 1971 - 1978/79 period. So the major declines in real fees in the early 1970's were accompanied by sharply higher consultation and visit rates;

TABLE_VI.3

FEE-ADJUSTED COSTS PER CAPITA, BY BROAD TYPE OF SERVICE, MANITOBA, 1971-1983/84

Year	Total	%Change	General Practice Consultation and Visits	% Change	Specialist Consultations and Visits	%Change	Other Medical Services	%Change
1983/84	$69.94	2.55%	$22.74	1.99%	$17.01	1.34%	$30.19	3.67%
1982/83	$68.20	2.21%	$22.30	3.99%	$16.78	1.07%	$29.12	1.54%
1981/82	$66.72	4.14%	$21.44	3.28%	$16.61	2.28%	$28.68	5.91%
1980/81	$64.07	-0.87%	$20.76	1.12%	$16.24	0.16%	$27.08	-2.93%
1979/80	$64.63	4.56%	$20.53	3.96%	$16.21	2.51%	$27.89	6.25%
1978/79	$61.81	2.35%	$19.75	1.14%	$15.81	2.60%	$26.25	3.12%
1977	$60.40	1.70%	$19.53	1.59%	$15.41	2.55%	$25.46	1.28%
1976	$59.39	3.88%	$19.22	4.16%	$15.03	4.93%	$25.14	3.04%
1975	$57.17	3.34%	$18.45	4.97%	$14.32	1.72%	$24.40	3.09%
1974	$55.33		$17.58		$14.08		$23.66	
1973		2.58%		5.80%		2.48%		0.48%
1972								
1971	$51.26		$14.84		$13.09		$23.33	
Average Annual % Change								
1971-1983/84		2.62%		3.62%		2.21%		2.17%
1971-1978/79		2.71%		4.16%		2.74%		-1.70%
1980/81-1983/84		2.96%		3.08%		1.56%		3.69%

with increasing fees has come lowered but still growing visit and consultation rates, along with sharply increased provision of other services and procedures.

Table VI.4 begins the task of detailed disaggregation of each broad type of service, focussing on general practitioner visits and consultations. Virtually all the growth in fee-adjusted cost per capita over the full period is attributable to increased numbers of office visits and consultations. There was very little change in relative cost for any of the categories, so we find no particular overall association (positive or negative) of utilization and cost patterns. The shorter periods are more interesting. With the predominance of office visits in this general practitioner category, it is not surprising to find the overall 1971 - 74 growth being reflected in office visit growth. What is surprising is the 8.4 percent per annum rate of growth for fee-adjusted office visit costs per capita (5.11% increase in visits per capita, and 3.13% increase in costs per visit). This came over a three year stretch in which the relative cost of office visits was up sharply (3+ percent per year), while that for the other three types of service was falling. Accompanying this shift in relative costs, then, was a boom in office visit rates while rates for the other three categories were flat or falling.

But the signals are scrambled once again. From 1980/81 to 1983/84, the relative cost of office visits fell one percent per year, but visit rates increased 3.6 percent per year. While that was the slowest rate of utilization increase over this latest period, the fastest growth,

TABLE_VI.4

GENERAL PRACTICE CONSULTATIONS AND VISITS, MANITOBA

Year	Fee-adjusted Cost per Capita	% Change	Consultations # per Cap.	% Change	Office Visits # per Cap.	% Change	Hospital Visits # per Cap.	% Change	Special Calls # per Cap.	% Change
1983/84	$22.74	1.99%	0.018	-4.75%	3.044	3.40%	0.855	1.63%	0.165	2.24%
1982/83	$22.30	3.99%	0.019	10.00%	2.944	3.00%	0.842	6.66%	0.161	8.05%
1981/82	$21.44	3.28%	0.017	6.54%	2.858	4.32%	0.789	11.63%	0.149	5.04%
1980/81	$20.76	1.12%	0.016	-4.79%	2.740	5.67%	0.707	1.12%	0.142	-5.92%
1979/80	$20.53	3.96%	0.017	-2.45%	2.593	4.82%	0.699	2.34%	0.151	8.62%
1978/79	$19.75	1.14%	0.018	-3.98%	2.474	-0.48%	0.683	-1.34%	0.139	-2.41%
1977	$19.53	1.59%	0.018	20.66%	2.486	2.99%	0.692	-5.50%	0.142	-3.38%
1976	$19.22	4.16%	0.015	19.15%	2.413	2.76%	0.733	7.38%	0.147	7.46%
1975	$18.45	4.97%	0.013	15.13%	2.349	8.79%	0.682	-0.86%	0.137	-9.05%
1974	$17.58		0.011		2.159		0.688		0.151	
1973		5.80%		0.81%		5.11%		-2.41%		-0.68%
1972										
1971	$14.84		0.011		1.859		0.740		0.154	
Average Annual % Change										
1971-1983/84		3.62%		4.46%		4.19%		1.21%		0.57%
1971-1978/79		4.16%		7.22%		4.16%		-1.14%		-1.45%
1980/81-1983/84		3.08%		3.74%		3.57%		6.56%		5.08%

	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change
1983/84	$15.36	-0.98%	$6.08	-1.24%	$2.69	-1.58%	$10.22	-0.95%
1982/83	$15.52	-0.07%	$6.16	0.02%	$2.73	0.12%	$10.31	1.41%
1981/82	$15.53	-1.78%	$6.15	-1.68%	$2.73	-2.56%	$10.17	0.77%
1980/81	$15.81	-0.96%	$6.26	-1.59%	$2.80	-2.82%	$10.09	-12.84%
1979/80	$15.96	-1.32%	$6.36	-1.94%	$2.88	-2.06%	$11.58	14.44%
1978/79	$16.17	2.78%	$6.49	1.93%	$2.94	1.51%	$10.12	2.01%
1977	$15.74	0.03%	$6.36	-0.38%	$2.90	1.54%	$9.92	-0.70%
1976	$15.73	-0.18%	$6.39	0.61%	$2.86	-0.70%	$9.99	-0.52%
1975	$15.76	-0.07%	$6.35	-1.35%	$2.88	-1.03%	$10.04	0.28%
1974	$15.77		$6.44		$2.91		$10.01	
1973		-1.62%		3.13%		-0.73%		-0.32%
1972								
1971	$16.57		$5.87		$2.97		$10.11	
Average Annual % Change								
1971-1983/84		-0.63%		0.30%		-0.82%		0.09%
1971-1978/79		-0.34%		1.44%		-0.13%		0.01%
1980/81-1983/84		-0.95%		-0.97%		-1.35%		0.40%

along with the sharpest drop in relative cost, is found in hospital visits. The second fastest growth was in home visits (or from 1980/81, special calls), which also showed the only gain in relative average cost. (One should note that the shift from home visits to special calls between 1979/80 and 1980/81 was not merely a relabelling. The definitional changes are likely responsible for some of the large apparent changes in price and quantity shown in Table VI.4 for special calls; Horne, J., 1985, personal communication.) Over the period 1971 - 1978/79, consultation rates show the fastest growth accompanying the sharpest decline in relative cost. The period 1974 to 1977 is particularly remarkable for its consultation rate increases, but these seem unrelated to any particular fee change. We have, once again, a smorgasbord.

This consultation rate phenomenon was not restricted to general practitioners. The specialist rate for consultations per capita also rose sharply, up 25 percent over the same three years (in contrast to almost 64 percent for general practitioners!), again apparently not linked to relative fee changes (Table VI.5). But whereas office visit growth dominated the general practice trends, consultations were far and away the fastest growing sub-category within the specialist visit/ consultation grouping, with fee-adjusted consultation cost per capita increasing 7.8 percent per annum, that for the other three specialist categories combined growing only 1.2 percent per annum.

Furthermore, the specialist consultation rate growth was sustained over the entire period. In contrast, the per capita rate of office

TABLE_VI.5

SPECIALIST CONSULTATIONS AND VISITS, MANITOBA

Year	Fee-adjusted Cost per Capita	% Change	Consultations # per Cap.	% Change	Office Visits # per Cap.	% Change	Hospital Visits # per Cap.	% Change	Special Calls # per Cap.	% Change
1983/84	$17.01	1.34%	0.210	5.37%	1.387	1.19%	0.510	-7.19%	0.036	0.08%
1982/83	$16.78	1.07%	0.199	5.95%	1.370	-0.72%	0.550	-2.50%	0.036	7.52%
1981/82	$16.61	2.28%	0.188	7.34%	1.380	-0.59%	0.564	7.32%	0.033	17.70%
1980/81	$16.24	0.16%	0.175	0.64%	1.388	-1.22%	0.525	-3.48%	0.028	40.68%
1979/80	$16.21	2.51%	0.174	10.16%	1.406	-0.86%	0.544	8.65%	0.020	4.90%
1978/79	$15.81	2.60%	0.158	5.90%	1.418	1.81%	0.501	-9.42%	0.019	-8.06%
1977	$15.41	2.55%	0.149	3.26%	1.393	3.24%	0.553	-3.75%	0.021	-11.06%
1976	$15.03	4.93%	0.145	8.23%	1.349	4.02%	0.575	2.79%	0.023	-0.24%
1975	$14.32	1.72%	0.134	12.60%	1.297	0.53%	0.559	0.04%	0.023	-21.55%
1974	$14.08		0.119		1.290		0.559		0.030	
1973		2.48%		2.03%		6.70%		1.65%		-2.07%
1972										
1971	$13.09		0.112		1.062		0.532		0.032	
Average Annual % Change										
1971-1983/84		2.21%		5.40%		2.25%		-0.35%		0.98%
1971-1978/79		2.74%		5.09%		4.22%		-0.86%		-7.01%
1980/81-1983/84		1.56%		6.22%		-0.04%		-0.97%		8.19%

	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change
1983/84	$21.89	0.04%	$7.55	-0.89%	$3.15	2.93%	$10.13	-0.79%
1982/83	$21.89	-0.19%	$7.62	-0.20%	$3.06	1.80%	$10.21	2.86%
1981/82	$21.93	-1.16%	$7.64	-0.07%	$3.00	-0.32%	$9.93	22.10%
1980/81	$22.18	-1.08%	$7.64	3.45%	$3.01	-2.97%	$8.13	-29.36%
1979/80	$22.43	-1.76%	$7.39	0.44%	$3.11	-1.79%	$11.51	13.67%
1978/79	$22.83	2.89%	$7.35	0.62%	$3.16	2.02%	$10.13	0.97%
1977	$22.19	0.31%	$7.31	0.38%	$3.10	0.13%	$10.03	0.60%
1976	$22.12	-0.51%	$7.28	-0.52%	$3.10	6.16%	$9.97	-0.46%
1975	$22.23	0.14%	$7.32	-0.14%	$2.92	-4.03%	$10.02	0.57%
1974	$22.20		$7.33		$3.04		$9.96	
1973		0.76%		-2.71%		-5.12%		-0.05%
1972								
1971	$21.70		$7.96		$3.56		$9.97	
Average Annual % Change								
1971-1983/84		0.07%		-0.44%		-1.02%		0.13%
1971-1978/79		0.72%		-1.12%		-1.67%		0.22%
1980/81-1983/84		-0.43%		-0.39%		1.46%		7.60%

visits was up sharply (6.7 percent per year) from 1971 to 1974, continued growing rapidly until 1978/79, and has actually declined since then. Special calls followed a reverse pattern, down sharply in the 1970's, up even more dramatically in the 1980's. But the individual year rates of change for special calls reflect, in part, fee item repackaging over the period 1978/79 through 1981/82. This is, in any event, at least a partial explanation for the 1980/81 rates of change, since that is the first year in which "special calls" replace "home visits" as a reported service category, and special calls clearly includes more than home visits since there are sharp jumps in the rates reported for the surgical and technical specialties (this detail not shown).

There was very little relative average cost movement in the specialist visit/consultation categories (with the dubious exception of special calls noted above), although over the entire twelve years, office visit and hospital visit costs fell somewhat relative to consultation costs, and the largest cost decline (hospital visits) was associated with a drop in per capita utilization.

The slowest overall growth in fee-adjusted cost per capita among the broad service categories came in "other medical services" (Table VI.3). However, one component of that category - laboratory services - turns out to have been the utilization growth leader among all categories (Table VI.6). In 1971, major surgery accounted for 30.5 percent of total fee-adjusted "other medical service" cost per capita, with laboratory services a distant second at 15.3 percent of total.

TABLE_VI.6

OTHER MEDICAL SERVICES AND PROCEDURES, MANITOBA

	Fee-adjusted Cost		Major Surgery		Minor Surgery		Surgical Assistance		Obstetrics	
Year	per Capita	% Change	# per Cap.	% Change	# per Cap.	% Change	# per Cap.	% Change	# per Cap.	% Change
1983/84	$30.19	3.67%	0.061	3.35%	0.133	4.88%	0.018	4.70%	0.036	8.68%
1982/83	$29.12	1.54%	0.059	1.23%	0.126	-1.02%	0.017	-3.82%	0.033	3.51%
1981/82	$28.68	5.91%	0.058	2.84%	0.128	4.95%	0.018	3.25%	0.032	13.32%
1980/81	$27.08	-2.93%	0.057	-3.18%	0.122	1.27%	0.017	-2.07%	0.028	18.27%
1979/80	$27.89	6.25%	0.059	0.86%	0.120	3.57%	0.018	1.26%	0.024	26.17%
1978/79	$26.25	3.12%	0.058	-1.66%	0.116	-0.14%	0.018	-5.33%	0.019	-0.27%
1977	$25.46	1.28%	0.059	1.34%	0.116	-2.62%	0.018	-3.80%	0.019	0.19%
1976	$25.14	3.04%	0.058	0.66%	0.119	1.30%	0.019	3.78%	0.019	0.06%
1975	$24.40	3.09%	0.058	-1.07%	0.118	2.43%	0.019	2.69%	0.019	-2.00%
1974	$23.66		0.058		0.115		0.018		0.019	
1973		0.48%		-1.53%		19.19%		-0.34%		-0.09%
1972										
1971	$23.33		0.061		0.068		0.018		0.019	
Average Annual % Change										
1971-1983/84		2.17%		-0.04%		5.73%		-0.08%		5.30%
1971-1978/79		1.70%		-0.77%		7.95%		-0.57%		-0.33%
1980/81-1983/84		3.69%		2.47%		2.90%		1.31%		8.43%

	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change
1983/84	$113.59	0.94%	$6.64	-4.22%	$47.28	1.95%	$63.00	-1.64%
1982/83	$112.54	-1.45%	$6.93	-0.45%	$46.37	0.94%	$64.05	-5.33%
1981/82	$114.20	0.15%	$6.97	-2.54%	$45.94	-6.30%	$67.65	-8.11%
1980/81	$114.03	-1.69%	$7.15	-2.91%	$49.03	-0.86%	$73.63	-17.43%
1979/80	$116.00	0.75%	$7.36	-1.87%	$49.45	3.14%	$89.16	-13.09%
1978/79	$115.13	3.09%	$7.50	0.86%	$47.94	2.68%	$102.59	1.00%
1977	$111.68	-1.12%	$7.44	-2.32%	$46.69	4.02%	$101.57	-0.83%
1976	$112.95	0.06%	$7.61	2.42%	$44.89	4.10%	$102.42	-2.82%
1975	$112.88	1.18%	$7.43	-0.75%	$43.12	0.44%	$105.40	-1.45%
1974	$111.57		$7.49		$42.93		$106.94	
1973		-1.43%		-10.00%		0.29%		-2.41%
1972								
1971	$116.48		$10.27		$42.56		$115.05	
Average Annual % Change								
1971-1983/84		-0.21%		-3.57%		0.88%		-4.90%
1971-1978/79		-0.17%		-4.39%		1.72%		-1.62%
1980/81-1983/84		-0.13%		-2.42%		-1.20%		-5.06%

TABLE_VI.6 (cont'd)

	Anaesthesia		Diagnostic Radiology		Laboratory Services		Other Diagnostic and Therapeutic Services	
Year	# per Cap.	% Change	# per Cap.	% Change	# per Cap.	% Change	# per Cap.	% Change
1983/84	0.072	-0.32%	0.580	1.80%	3.253	3.85%	1.091	0.35%
1982/83	0.072	-0.92%	0.569	1.47%	3.132	6.01%	1.088	7.98%
1981/82	0.073	2.24%	0.561	-7.53%	2.955	7.70%	1.007	15.07%
1980/81	0.071	-9.68%	0.607	-4.66%	2.744	0.61%	0.875	2.61%
1979/80	0.079	-2.17%	0.636	2.04%	2.727	9.89%	0.853	5.47%
1978/79	0.081	-5.52%	0.624	-0.57%	2.482	4.81%	0.809	-1.33%
1977	0.085	-9.37%	0.627	1.07%	2.368	9.52%	0.820	-1.35%
1976	0.094	-0.84%	0.621	1.18%	2.162	6.16%	0.831	-0.70%
1975	0.095	-0.49%	0.613	2.60%	2.036	8.40%	0.837	4.93%
1974	0.095		0.598		1.879		0.798	
1973		-12.59%		30.41%		4.94%		6.37%
1972								
1971	0.143		0.270		1.625		0.663	

Average Annual
% Change

1971-1983/84		-5.56%		6.59%		5.95%		4.24%
1971-1978/79		-7.85%		12.73%		6.23%		2.89%
1980/81-1983/84		0.32%		-1.52%		5.84%		7.63%

	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change
1983/84	$32.07	-0.43%	$5.64	1.55%	$2.42	2.14%	$5.05	-0.94%
1982/83	$32.21	2.32%	$5.55	1.68%	$2.37	-5.19%	$5.09	0.28%
1981/82	$31.47	5.05%	$5.46	7.04%	$2.50	1.51%	$5.08	-1.34%
1980/81	$29.96	2.05%	$5.10	-2.03%	$2.46	-0.32%	$5.15	-2.49%
1979/80	$29.36	6.06%	$5.21	-0.98%	$2.47	1.99%	$5.28	-0.55%
1978/79	$27.68	1.59%	$5.26	2.64%	$2.42	4.46%	$5.31	5.80%
1977	$27.25	2.25%	$5.12	-1.27%	$2.32	0.35%	$5.02	3.15%
1976	$26.65	-0.42%	$5.19	4.12%	$2.31	2.82%	$4.86	3.16%
1975	$26.76	-0.28%	$4.98	-0.75%	$2.24	2.09%	$4.72	1.90%
1974	$26.83		$5.02		$2.20		$4.63	
1973		14.21%		-23.24%		-0.02%		-2.89%
1972								
1971	$18.01		$11.10		$2.20		$5.05	

Average Annual
% Change

1971-1983/84		4.92%		-5.49%		0.79%		-0.01%
1971-1978/79		6.33%		-10.13%		1.37%		0.71%
1980/81-1983/84		2.29%		3.39%		-0.57%		-0.67%

Over the entire period 1971 to 1983/84, there was growth in fee-adjusted cost per capita in excess of one percent per annum in only three of the nine specific "other medical services" areas - minor surgery, laboratory services and "other diagnostic and therapeutic services". The average annual rates of growth for those three sub-categories were 2 percent, 6.8 percent, and 4.2 percent. Not surprisingly, laboratory services had assumed the position as the single largest component of other medical services cost per capita by 1983/84. Fee-adjusted cost per capita actually fell over the period for major surgery and anaesthesia, although in each case the declines were less than one percent per annum.

The growth in laboratory services fee-adjusted cost per capita was even more dramatic from 1971 through 1978/79 at 7.7 percent per annum, but the story for both sub-periods is utilization-driven increase. The number of services per capita increased about 6 percent per annum in each period, while growth in fee-adjusted cost per service has been a much more moderate 0.8 percent per annum. While we observe apparently rapid growth in services per capita for diagnostic radiology, minor surgery and obstetrics, in the first two cases the growth can be traced to the period 1971 - 74, and in all three cases it is extremely rapid growth accompanying equally dramatic declines in relative cost per service, indicative of a fee item restructuring.

In the case of obstetrics, there was no increase in birth rates in Manitoba that would explain a 69 percent increase in obstetric services per capita over the period 1978/79 to 1981/82. The fact that relative cost per service fell 34 percent over the same period points rather convincingly to a shift from package to partial a la carte billing, with an attendant increase in cost per capita. The growth in "other diagnostic and therapeutic services" is less likely to be similarly explained, as we find no untoward drops or increases in relative cost for that category. What we do find is relatively rapid growth in servicing in the early 1970's and then again in the 1980's, periods during which relative costs were (by and large) falling, either through changes in service mix or lower than average price increases for the included items.

Moving quickly over the other items, we find a significant increase in the incidence of major surgery since 1980/81, but clearly unrelated (at least at this level of aggregation) to relative price movements. In minor surgery there appears to be a general inverse association between price changes and growth in utilization. This is particularly apparent during the 1980's. No association or pattern seems evident for surgical assistance. The cost per service for anaesthetic services was up sharply from 1971 to 1974, and then again from 1976 right through to 1982/83. Accompanying this rise is a sharp drop in utilization per capita from 1971 to 1974, and then less dramatic but still rapid reductions from 1976 through to 1980/81. The 1971 to 1974 period looks suspiciously like fee-item regrouping or anaesthetic units reclassification, since there is no evidence of similar declines in surgical use. After that, however, interpretation becomes more difficult. The major use reduction in 1977 was accompanied by some relative gains in per unit cost, and by a drop in minor surgery utilization. The following year's reduction came with a drop in major surgery. In 1979/80 a major increase in relative price was coincident with a sharp rise in rates of minor surgery. Despite this, anaesthetic use fell off. More recent years are an equally confusing mix of associations between surgical patterns and anaesthesia unit prices.

This discussion serves to highlight the difficulty of attempting to garner supply curve evidence from time series of this nature. The fact that service category costs per unit reflect some combination of true price change, and shifting service mix within service category, and that the latter phenomenon will at times embody exogenous shifts in mix unrelated to practice patterns, makes any straightforward interpretation difficult.

We complete our analysis of the Manitoba experience with Table VI.7, where expenditure and utilization are related to growth in physician supply. The number of physicians series is active civilian physicians excluding interns and residents, so overstates the full-time-equivalent fee practice complement. However, our interest is in shifts over time rather than accurate income figures, and unless there are major changes in the relationship between clinical f.t.e.'s and active civilian physicians, this series serves the purpose. Physician supply grew 40 percent over these twelve years, or 31 percent faster than overall population. In the face of this rapid expansion of physician supply, service provision per physician actually grew slightly! However, the decline in real fees of 1.87 percent per year in conjunction with the rapid growth in stock caused real 'incomes' per physician to fall almost 1.6 percent per year, or 17 percent overall. Erosion was faster in the earlier period because real fees were down more sharply. The servicing per physician series shows remarkable stability (recalling the slightly questionable accuracy of the 1979/80 and 1980/81 figures) in the face of relatively significant declines in real fees, and a major increase in the supply pool.

This final Table seems to provide yet another piece of Canadian evidence suggesting that service provision adjusts upward to compensate fully for increases in physician supply, but only partially compensates for fee pressure.

TABLE_VI.7

EXPENDITURE AND UTILIZATION PER PHYSICIAN, MANITOBA

Year	# of MDs	% Change	Payments per MD	% Change	Real Payments per MD	% Change	Fee Index	% Change	Fee-adj. Payments per MD	% Change	Population per MD	% Change
1983/84	1737	3.76%	$95,857	4.95%	$34,531	-0.76%	2.265	5.06%	$42,321	-0.11%	605.1	-2.59%
1982/83	1674	5.42%	$91,340	9.47%	$34,796	-1.20%	2.156	11.59%	$42,366	-1.90%	621.2	-4.02%
1981/82	1588	2.12%	$83,435	17.40%	$35,220	4.37%	1.932	14.80%	$43,186	2.27%	647.2	-1.79%
1980/81	1555	2.37%	$71,068	7.78%	$33,746	-2.15%	1.683	11.31%	$42,227	-3.17%	659.0	-2.32%
1979/80	1519	0.13%	$65,938	12.13%	$34,487	2.75%	1.512	7.85%	$43,610	3.98%	674.7	-0.56%
1978/79	1517	1.74%	$58,803	6.03%	$33,563	-2.69%	1.402	5.33%	$41,942	0.66%	678.5	-1.65%
1977	1491	0.95%	$55,459	8.53%	$34,489	0.50%	1.331	6.99%	$41,667	1.44%	689.9	-0.26%
1976	1477	3.43%	$51,099	10.30%	$34,318	2.60%	1.244	9.12%	$41,076	1.08%	691.7	-2.69%
1975	1428	5.54%	$46,326	3.18%	$33,448	-6.88%	1.140	5.07%	$40,637	-1.80%	710.8	-4.97%
1974	1353		$44,899		$35,919		1.085		$41,381		748.0	
1973	1309	2.84%		2.47%		-4.87%	1.024	1.95%		0.51%	762.4	-2.01%
1972	1278						1.024				776.2	
1971	1244		$41,729		$41,729		1.024		$40,751		795.0	

Average Annual % Change	# of MDs	% Change	Payments per MD	% Change	Real Payments per MD	% Change	Fee Index	% Change	Fee-adj. Payments per MD	% Change	Population per MD	% Change
1971-1983/84		2.82%		7.18%		-1.57%		6.84%		0.32%		-2.25%
1971-1978/79		2.87%		5.02%		-3.06%		4.59%		0.41%		-2.24%
1980/81-1983/84		3.76%		10.49%		0.77%		10.41%		0.07%		-2.80%

SASKATCHEWAN

The expenditure and utilization data in the Annual Reports of the Saskatchewan Medical Care Insurance Commission (MCIC) provide their own unique challenge to time series analysis. One of the Health Regions in the province, Swift Current, administers its own medical care program under contractual arrangement between the Health Region and the Commmssion. Until and including fiscal 1980/81, the Health Region carried responsibility for administering the fee-for-service claims of the practitioners in the Region. Effective April 1, 1981, MCIC took over responsibility for processing the claims of Swift Current physicians. This would be of only passing interest were it not for the fact that MCIC Annual Reports do not include payments on behalf of beneficiaries in the Swift Current region for the years through 1980/81, but do include those services and costs subsequently.

While Swift Current does not constitute a major segment of the province, it does nevertheless contain 4 to 5 percent of the provinces population, sufficient to raise the possibility of discontinuities unrelated to the relationships under investigation. We approached the MCIC with a request to provide the data for 1981/82, 1982/83 and 1983/84, necessary to the generation of a data set net of the Swift Current Health Region. The data on which the tables in the remainder of this chapter are based reflect the generous assistance of MCIC staff (details may be found in the data appendix).

Thus, this section is in fact about Saskatchewan without the Swift Current Health Region. All data are date of payment based, and so again subject to the vagaries of claims processing. In this case, however, we were unable to spot any footnotes in the annual reports alluding to shifts in processing speed.

In Chapter 3, Saskatchewan was identified as one of four provinces in which physician fees kept pace with general inflation, and as one of the three within those four where output per physician grew in a range around 1 percent per year. Thus, Saskatchewan was one of only three provinces in which real expenditure per physician actually rose. But one of the other provinces, B.C., had a quite different record in showing major increases in such expenditure. Saskatchewan stands, then, as exemplary of a province in which both fee and utilization growth were less rapid than in B.C., but where real expenditure per physician did, nevertheless, rise.

Total costs for physician services rose 336 percent over the twelve years 1971 to 1983/84, or 13 percent per annum (Table VI.8). The major growth came from 1974 to 1976, and then later from 1979 to 1982/83. With population growing at under one percent per year, per capita costs were up 12.3 percent per annum, and a much more rapid 17 percent per annum since 1979. Relative to general price movements, costs per capita were up in each of the three four-year sub-periods. But despite 1979 to 1983/84 being the sub-period of most rapid general inflation, real costs per capita grew four to five times as fast in that period as in the prior two sub-periods - up 6.6 percent per annum for four years!

Table VI.9 indicates rather clearly that this growth in real costs

TABLE_VI.8

PHYSICIAN SERVICES EXPENDITURE PER CAPITA, SASKATCHEWAN, 1971 - 1983/84

Year	Total Cost ($,000)	% Change	Population	% Change	Cost per Capita	% Change	CPI	% Change	Real Cost per Capita	% Change
1983/84	$145,549	8.86%	965,814	1.40%	$150.70	7.36%	2.776	5.75%	$54.29	1.52%
1982/83	$133,701	22.60%	952,484	1.09%	$140.37	21.28%	2.625	10.81%	$53.47	9.46%
1981/82	$109,052	19.20%	942,243	0.08%	$115.74	19.11%	2.369	12.49%	$48.85	5.89%
1980/81	$91,484	21.83%	941,531	0.64%	$97.17	21.05%	2.106	10.15%	$46.14	9.90%
1979	$75,093	9.00%	935,539	0.74%	$80.27	8.20%	1.912	9.13%	$41.98	-0.86%
1978	$68,892	10.95%	928,633	1.05%	$74.19	9.80%	1.752	8.96%	$42.34	0.78%
1977	$62,092	7.26%	919,007	1.31%	$67.56	5.88%	1.608	7.99%	$42.02	-1.95%
1976	$57,887	17.40%	907,161	1.94%	$63.81	15.17%	1.489	7.51%	$42.86	7.12%
1975	$49,306	13.93%	889,886	1.09%	$55.41	12.71%	1.385	10.80%	$40.01	1.72%
1974	$43,277	4.72%	880,321	.00%	$49.16	4.72%	1.250	10.91%	$39.33	-5.59%
1973	$41,327	9.69%	880,295	-1.14%	$46.95	10.95%	1.127	7.54%	$41.66	3.17%
1972	$37,676	12.84%	890,417	0.27%	$42.31	12.54%	1.048	4.80%	$40.37	7.39%
1971	$33,389		888,057		$37.60		1.000		$37.60	

Average Annual % Change										
1971 - 1983/84		13.05%		0.70%		12.27%		8.88%		3.11%
1971 - 1975		10.24%		0.05%		10.18%		8.48%		1.56%
1975 - 1979		11.09%		1.26%		9.71%		8.40%		1.21%
1979 - 1983/84		17.99%		0.80%		17.06%		9.77%		6.64%

NOTE: All data are for Saskatchewan excluding Swift Current Health Region.
See text and data appendix for details.

TABLE_VI.9

FEE-ADJUSTED COST PER CAPITA, SASKATCHEWAN

Year	Real Cost per Capita	% Change	Fee Index	% Change	Real Fees	% Change	Fee-adjusted Cost per Capita	% Change
1983/84	$54.29	1.52%	2.410	7.21%	0.868	1.37%	$62.53	0.14%
1982/83	$53.47	9.46%	2.248	20.34%	0.856	8.61%	$62.44	0.78%
1981/82	$48.85	5.89%	1.868	13.08%	0.789	0.52%	$61.96	5.34%
1980/81	$46.14	9.90%	1.652	13.54%	0.784	3.08%	$58.82	6.62%
1979	$41.98	-0.86%	1.455	8.42%	0.761	-0.65%	$55.17	-0.21%
1978	$42.34	0.78%	1.342	6.42%	0.766	-2.32%	$55.28	3.17%
1977	$42.02	-1.95%	1.261	6.77%	0.784	-1.13%	$53.58	-0.84%
1976	$42.86	7.12%	1.181	8.85%	0.793	1.25%	$54.03	5.81%
1975	$40.01	1.72%	1.085	11.97%	0.783	1.06%	$51.07	0.66%
1974	$39.33	-5.59%	0.969	3.30%	0.775	-6.86%	$50.73	1.37%
1973	$41.66	3.17%	0.938	3.88%	0.832	-3.41%	$50.05	6.81%
1972	$40.37	7.39%	0.903	2.85%	0.862	-1.86%	$46.86	9.42%
1971	$37.60		0.878		0.878		$42.82	

Average Annual
% Change

1971 - 1983/84		3.11%		8.78%		-0.09%		3.21%
1971 - 1975		1.56%		5.43%		-2.81%		4.50%
1975 - 1979		1.21%		7.61%		-0.72%		1.95%
1979 - 1983/84		6.64%		13.45%		3.35%		3.18%

per capita was far more than a fees phenomenon, although in certain years fee increases dominate. Furthermore, the relative importance of fee growth in trends in real cost per capita shifted markedly over time. Overall, however, the 3.1 percent per capita increase in real costs was entirely a utilization phenomenon. Fees in Saskatchewan kept pace with general inflation, falling sharply behind early, almost holding their own in the mid-period, but forging back to even ground since 1979. We see accompanying this, rapid growth in per capita utilization while real fees were being squeezed, moderating increases in utilization as fees began to flatten out, but a resurgence in per capita servicing concurrent with the rapid real fee growth. Thus, in the recent period 1979 - 1983/84, the 6.6 percent increase in real costs per capita was about half real fees, half per capita utilization. Single year associations contain the usual confusing mix. Use rates are up sharply along with fees in 1980/81, up sharply with flat or falling fees in 1972, 1973 and 1981/82, and flat or slightly declining with falling, flat, and sharply higher fees respectively, in 1977, 1979 and 1982/83. There is clearly something here for every theory.

The increases in per capita utilization were not uniform across types of service. In fact we see in Table VI.10 that utilization of "other services and procedures" was actually down slightly over the twelve years. The period of most rapid growth, 1971-75, was led by consultation and visit rates, while the most recent upsurge has been diagnostic services driven, as it was in Manitoba (Table VI.6).

Fee-adjusted costs per capita for consultations and visits are disaggregated by specific type, and into their average cost and use rate

TABLE_VI.10

FEE-ADJUSTED COSTS PER CAPITA, BY BROAD TYPE OF SERVICE, SASKATCHEWAN, 1971 - 1983/84

Year	Total	% Change	Consultations and Visits	% Change	Diagnostic Services	% Change	Other Services and Procedures	% Change
1983/84	$62.53	0.14%	$38.61	-1.11%	$9.48	5.62%	$14.45	0.12%
1982/83	$62.44	0.78%	$39.04	1.83%	$8.97	4.35%	$14.43	-3.92%
1981/82	$61.96	5.34%	$38.34	6.01%	$8.60	10.95%	$15.02	0.80%
1980/81	$58.82	6.62%	$36.17	6.75%	$7.75	9.44%	$14.90	4.90%
1979	$55.17	-0.21%	$33.88	0.26%	$7.08	3.84%	$14.20	-3.16%
1978	$55.28	3.17%	$33.80	2.85%	$6.82	2.52%	$14.66	4.25%
1977	$53.58	-0.84%	$32.86	-0.54%	$6.65	-1.09%	$14.07	-1.40%
1976	$54.03	5.81%	$33.04	6.77%	$6.73	4.22%	$14.27	4.37%
1975	$51.07	0.66%	$30.94	3.72%	$6.45	-3.99%	$13.67	-5.69%
1974	$50.73	1.37%	$29.83	4.87%	$6.72	5.90%	$14.49	-4.99%
1973	$50.05	6.81%	$28.45	9.38%	$6.35	4.94%	$15.25	3.05%
1972	$46.86	9.42%	$26.01	18.01%	$6.05	5.97%	$14.80	-1.82%
1971	$42.82		$22.04		$5.71		$15.08	

Average Annual % Change	Total % Change	Consultations and Visits % Change	Diagnostic Services % Change	Other Services and Procedures % Change
1971 - 1983/84	3.21%	4.78%	4.32%	-0.36%
1971 - 1975	4.50%	8.86%	3.12%	-2.42%
1975 - 1979	1.95%	2.29%	2.35%	0.96%
1979 - 1983/84	3.18%	3.32%	7.55%	0.43%

components in Table VI.11. Over the period as a whole, partial assessments showed both the most rapid increase in relative average cost, and the most rapid growth in utilization. But beyond that there is no evident pattern. Second in utilization growth were consultations, for which relative cost fell over the period. Faster falling average costs are found within the special/emergency calls composite, but it does not show unusual utilization growth (high or low).

The shorter periods are, as usual, both more interesting and more confusing. The high utilization high cost growth position of partial assessments is all attributable to the early period 1971-75. In fact, the position of consultations and visits as having the fastest growing cost per capita over this early period (Table VI.10) is entirely attributable to the pattern of partial assessments. At first glance, the two years 1972 and 1973 would appear to suggest a major utilization response to sharply higher relative fees. In fact, nothing of the kind appears to have transpired.

Our partial assessment category combines "specific assessments" and "minor assessments" through 1974, "partial assessments and "minor assessments" for the remaining years. This aggregation was motivated by a repackaging of most minor assessments as partial assessments beginning with the 1979 Annual Report. Unfortunately this combination yields somewhat misleading data for 1972 and 1973. The large jump in utilization within our "partial assessments" category came entirely within what was then labelled "minor assessments". But all the growth in relative average cost was in "specific assessments", which cost doubled in nominal terms over the period. Thus, we can attach little

TABLE_VI.11

CONSULTATIONS AND VISITS, SASKATCHEWAN

Year	Complete Assessments # per Cap.	Complete Assessments % Change	Partial Assessments # per Cap.	Partial Assessments % Change	Consultations # per Cap.	Consultations % Change	Special Calls and Emerg. Visits # per Cap.	Special Calls and Emerg. Visits % Change	Hospital Visits # per Cap.	Hospital Visits % Change
1983/84	0.442	-3.24%	3.807	3.11%	0.290	4.47%	0.423	-0.53%	1.114	-4.65%
1982/83	0.456	-2.44%	3.692	5.19%	0.278	4.16%	0.425	6.14%	1.168	-9.51%
1981/82	0.468	7.98%	3.510	9.05%	0.267	8.19%	0.400	-6.31%	1.291	-6.57%
1980/81	0.433	15.40%	3.218	9.04%	0.247	7.61%	0.427	-2.69%	1.382	2.68%
1979	0.376	2.32%	2.952	1.89%	0.229	2.51%	0.439	5.80%	1.346	-1.54%
1978	0.367	0.92%	2.897	1.00%	0.224	4.55%	0.415	9.29%	1.367	2.15%
1977	0.364	-7.33%	2.868	1.05%	0.214	4.73%	0.380	-6.00%	1.338	-7.09%
1976	0.392	2.44%	2.839	10.57%	0.204	14.69%	0.404	5.59%	1.440	2.88%
1975	0.383	3.26%	2.567	6.28%	0.178	12.57%	0.383	0.16%	1.400	-4.58%
1974	0.371	-3.29%	2.415	8.25%	0.158	7.90%	0.382	1.02%	1.467	-2.89%
1973	0.384	-24.61%	2.231	24.06%	0.147	13.56%	0.378	-2.06%	1.511	4.40%
1972	0.509	-9.35%	1.799	20.89%	0.129	7.91%	0.386	5.86%	1.447	-0.36%
1971	0.561		1.488		0.120		0.365		1.452	

Average Annual % Change

1971 - 1983/84	-1.98%	8.14%	7.67%	1.24%	-2.19%
1971 - 1975	-9.11%	14.61%	10.45%	1.21%	-0.91%
1975 - 1979	-0.50%	3.55%	6.52%	3.50%	-0.98%
1979 - 1983/84	4.14%	6.56%	6.09%	-0.95%	-4.62%

	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change
1983/84	$12.38	1.41%	$5.64	-4.87%	$18.36	-4.60%	$6.98	4.99%	$3.04	4.33%
1982/83	$12.21	-4.88%	$5.93	-0.92%	$19.25	-7.52%	$6.65	19.37%	$2.92	6.04%
1981/82	$12.83	3.89%	$5.98	2.60%	$20.81	3.26%	$5.57	-29.18%	$2.75	2.38%
1980/81	$12.35	-3.05%	$5.83	7.65%	$20.15	-3.26%	$7.86	-24.62%	$2.69	-3.56%
1979	$12.74	5.88%	$5.42	-1.91%	$20.83	-5.53%	$10.43	-7.00%	$2.79	0.40%
1978	$12.03	3.78%	$5.52	-0.35%	$22.05	-4.48%	$11.22	0.65%	$2.78	3.84%
1977	$11.60	8.68%	$5.54	-3.60%	$23.09	-0.10%	$11.14	17.15%	$2.67	-3.02%
1976	$10.67	-0.59%	$5.75	1.36%	$23.11	-4.17%	$9.51	-11.37%	$2.76	-0.30%
1975	$10.73	-9.20%	$5.67	-0.44%	$24.12	2.88%	$10.73	8.72%	$2.76	-3.62%
1974	$11.82	7.47%	$5.70	0.02%	$23.44	1.45%	$9.87	4.78%	$2.87	-5.19%
1973	$11.00	3.57%	$5.70	15.50%	$23.11	-2.34%	$9.42	-4.13%	$3.02	-10.41%
1972	$10.62	11.73%	$4.93	34.13%	$23.66	1.44%	$9.83	7.53%	$3.38	-4.05%
1971	$9.50		$3.68		$23.33		$9.14		$3.52	

Average Annual % Change

1971 - 1983/84	2.23%	3.63%	-1.98%	-2.22%	-1.20%
1971 - 1975	3.09%	11.45%	0.84%	4.10%	-5.85%
1975 - 1979	4.38%	-1.14%	-3.59%	-0.71%	0.20%
1979 - 1983/84	-0.72%	1.01%	-3.11%	-9.56%	2.23%

significance to the aggregate category combination of sharply higher fees and rapidly increasing utilization.

Over the same period the other specific service category experiencing widespread 'popularity' was consultations. Evidently the mix and overall fee levels showed little movement, but consultation rates were up a dramatic 10.5 percent per annum per capita. The relative average cost of hospital visits fell sharply, that drop accompanied by some slowdown in hospital visit rates, particularly from 1973 to 1975.

From 1975 to 1979 the average cost of a complete assessment gained 24 percent relative to that for partial assessments. But growth in utilization for the latter continued, with a major increase in 1976 and slow but steady growth as relative cost fell from 1976 through 1979. Use rates for complete assessments were similar, except that instead of a one year surge in 1976, we find a one year major reduction in 1977 associated with a significant increase in relative cost. This reduction left an overall decline in complete assessments per capita for the four years. The fastest utilization growth for the period 1975 - 83/84 is found for consultations, and it accompanied steady erosion in relative average cost per service. The other category and period of interest in this table is special and emergency visits from 1979 to 1983/84. In 1980/81 and again the following year the average cost of such visits fell steeply. So did the visit rates. Corresponding with this, the MCIC disaggregated an emergency call flat fee into components for the actual service rendered, and an 'emergency' surcharge. While the combined fee exceeded the old flat rate, the fee for the surcharge alone did not. But only the surcharge was coded as an emergency call. This would clearly explain the dramatic drop in cost per service, but leaves the accompanying drop in utilization unexplained (Thomson, D., 1985, personal communication).

In 1982/83 there was an abrupt reversal in average cost, and utilization turned up again. There is also some apparent (inverse) association between relative price and use for hospital visits over the period 1979 - 1983/84, but one must work hard to pull any particular likely price/use associations from this table.

Recall from Table VI.10 that diagnostic services were neck and neck with consultations and visits as far as overall twelve year growth in cost per capita is concerned. In Table VI.12 we find laboratory services and, particularly, "other diagnostic procedures" being the impetus behind this overall rate of growth. This latter category includes ECGs, EEGs, biopsies, allergy investigation, D & C's, diagnostic ultrasound, etc. It is interesting to note the accelerating growth in successive four year periods for this category. While the pattern of relative average cost suggests some major shifts in service mix within this very heterogenous group, the overall pattern of relative cost decline and major utilization increase is also what one might expect for new technologies -- onstream initially as low use, high cost items; as they become more widespread and more familiar to practitioners and/or as the cost of the capital equipment itself falls, use rates rise and provincial governments attempt to negotiate reduced fees. Even if they are successful, however, fees generally fall more slowly than the

TABLE_VI.12

DIAGNOSTIC SERVICES, SASKATCHEWAN

Year	Fee-adjusted Cost per Capita	% Change	Laboratory Services # per Cap.	% Change	Diagnostic Radiology # per Cap.	% Change	Other Diagnostic Procedures # per Cap.	% Change
1983/84	$9.48	5.62%	2.479	-0.10%	0.194	1.43%	0.531	8.57%
1982/83	$8.97	4.35%	2.481	8.71%	0.191	4.55%	0.489	18.65%
1981/82	$8.60	10.95%	2.283	5.34%	0.183	3.34%	0.412	32.12%
1980/81	$7.75	9.44%	2.167	3.82%	0.177	-1.41%	0.312	11.82%
1979	$7.08	3.84%	2.087	-3.06%	0.180	-6.37%	0.279	2.48%
1978	$6.82	2.52%	2.153	5.14%	0.192	-0.59%	0.272	7.70%
1977	$6.65	-1.09%	2.048	-0.80%	0.193	0.76%	0.253	4.37%
1976	$6.73	4.22%	2.064	8.37%	0.191	1.85%	0.242	8.52%
1975	$6.45	-3.99%	1.905	8.42%	0.188	3.25%	0.223	1.01%
1974	$6.72	5.90%	1.757	12.22%	0.182	0.62%	0.221	6.93%
1973	$6.35	4.94%	1.565	11.27%	0.181	8.43%	0.207	3.19%
1972	$6.05	5.97%	1.407	3.01%	0.167	14.71%	0.200	3.33%
1971	$5.71		1.366		0.145		0.194	

Average Annual % Change

1971 - 1983/84		4.32%		5.09%		2.43%		8.76%
1971 - 1975		3.12%		8.67%		6.62%		3.59%
1975 - 1979		2.35%		2.31%		-1.14%		5.74%
1979 - 1983/84		7.55%		4.39%		1.95%		17.45%

	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change
1983/84	$1.61	0.14%	$11.58	-1.33%	$6.10	8.97%
1982/83	$1.61	3.09%	$11.73	-1.75%	$5.60	-19.13%
1981/82	$1.56	0.07%	$11.94	11.79%	$6.92	-12.96%
1980/81	$1.56	14.44%	$10.68	0.48%	$7.95	-4.77%
1979	$1.36	20.00%	$10.63	0.37%	$8.35	-3.05%
1978	$1.14	-5.38%	$10.59	2.84%	$8.61	-1.44%
1977	$1.20	-3.38%	$10.30	-0.75%	$8.74	-2.72%
1976	$1.24	-4.02%	$10.38	1.50%	$8.98	-3.00%
1975	$1.29	-9.30%	$10.22	-5.86%	$9.26	-8.59%
1974	$1.43	3.14%	$10.86	-3.34%	$10.13	-2.58%
1973	$1.38	1.08%	$11.24	-3.16%	$10.40	-4.78%
1972	$1.37	-0.66%	$11.60	-3.29%	$10.92	1.72%
1971	$1.38		$12.00		$10.73	

Average Annual % Change

1971 - 1983/84		1.31%		-0.30%		-4.60%
1971 - 1975		-1.55%		-3.92%		-3.63%
1975 - 1979		1.30%		0.98%		-2.55%
1979 - 1983/84		4.27%		2.15%		-7.55%

corresponding rate of increase in utilization. In 1983/84 we find sharp increases in both utilization and average cost (up 9 percent over and above a 7.2 percent general fee increase, but this coming after two years of no fee increase in this category - Tables VI.9 and VI.12).

As for laboratory services, the major increases in servicing came in the early to mid-1970's and then again in the early 1980's, the latter coming on the heels of a 68 percent (!) increase in fees over the period 1978 to 1980.

"Other medical services and procedures" was the slowest growing among the three broad service categories. In fact, fee-adjusted cost per capita actually fell slightly over the period and fell fairly significantly while consultations and visits were forging ahead from 1971 to 1975. In Table VI.13 that overall experience is broken out into its eight specific service components. Despite the flat trend overall, we find fee-adjusted cost per capita for psychotherapy up a considerable 4.8 percent per annum for twelve years and, on the other side, that for obstetrics down 5.2 percent per annum and for refractions down 4.8 percent per year. The latter simply reflects the increasing proportion of refractions being handled by optometrists (the ratio of optometrist to physician refractions was about 2 to 1 in 1971, over 5 to 1 in 1983/84).

The offsetting rates of cost and use change for surgical assistance, 1972 to 1974, are highly suggestive of fee item restructuring, since one would expect surgical assistance patterns to bear some resemblance to those for major surgery. Both major

TABLE_VI.13

OTHER MEDICAL SERVICES AND PROCEDURES, SASKATCHEWAN

	Fee-adjusted		Major		Minor		Surgical		Obstetrics	
	Cost		Surgery		Surgery		Assistance			
Year	per Capita	% Change	# per Cap.	% Change	# per Cap.	% Change	# per Cap.	% Change	# per Cap.	% Change
1983/84	$14.45	0.12%	0.085	3.41%	0.122	8.47%	0.052	-2.93%	0.020	-2.39%
1982/83	$14.43	-3.92%	0.082	4.67%	0.112	-3.77%	0.053	6.92%	0.021	2.05%
1981/82	$15.02	0.80%	0.079	4.44%	0.117	2.72%	0.050	7.47%	0.020	2.63%
1980/81	$14.90	4.90%	0.075	3.61%	0.114	6.74%	0.046	8.83%	0.020	1.00%
1979	$14.20	-3.16%	0.073	-4.53%	0.107	0.06%	0.043	-9.78%	0.019	0.36%
1978	$14.66	4.25%	0.076	7.99%	0.107	0.69%	0.047	5.45%	0.019	2.97%
1977	$14.07	-1.40%	0.070	-2.94%	0.106	-8.80%	0.045	4.28%	0.019	-0.13%
1976	$14.27	4.37%	0.073	2.13%	0.116	10.73%	0.043	0.68%	0.019	5.50%
1975	$13.67	-5.69%	0.071	0.03%	0.105	-0.43%	0.043	-7.86%	0.018	0.19%
1974	$14.49	-4.99%	0.071	-3.40%	0.105	5.22%	0.046	30.35%	0.018	-2.49%
1973	$15.25	3.05%	0.073	9.81%	0.100	11.82%	0.036	15.97%	0.018	0.53%
1972	$14.80	-1.82%	0.067	-0.76%	0.089	0.37%	0.031	-0.27%	0.018	-16.28%
1971	$15.08		0.067		0.089		0.031		0.022	

Average Annual % Change

1971 - 1983/84		-0.36%		1.95%		2.65%		4.44%		-0.65%
1971 - 1975		-2.42%		1.30%		4.13%		8.56%		-4.78%
1975 - 1979		0.96%		0.54%		0.44%		-0.03%		2.15%
1979 - 1983/84		0.43%		4.03%		3.43%		4.96%		0.80%

	Fee-adj.		Fee-adj.		Fee-adj.		Fee-adj.	
	Cost per	% Change	Cost per	% Change	Cost per	% Change	Cost per	% Change
1983/84	$73.11	-2.84%	$8.21	-8.10%	$11.78	2.42%	$56.62	3.85%
1982/83	$75.24	-7.32%	$8.94	-3.75%	$11.51	-4.97%	$54.52	-9.75%
1981/82	$81.18	-5.28%	$9.29	-10.55%	$12.11	-5.91%	$60.41	-7.51%
1980/81	$85.70	2.31%	$10.38	-9.21%	$12.87	13.19%	$65.31	-5.65%
1979	$83.77	-3.02%	$11.44	6.29%	$11.37	1.02%	$69.22	-6.59%
1978	$86.38	-3.72%	$10.76	4.83%	$11.25	-2.88%	$74.10	5.24%
1977	$89.72	-0.65%	$10.26	-1.68%	$11.59	0.32%	$70.41	4.55%
1976	$90.31	0.73%	$10.44	-3.06%	$11.55	0.89%	$67.34	-13.56%
1975	$89.66	-4.32%	$10.77	6.89%	$11.45	-0.53%	$77.91	-21.09%
1974	$93.70	-4.87%	$10.07	-6.56%	$11.51	-27.96%	$98.73	0.13%
1973	$98.50	-5.37%	$10.78	-6.17%	$15.97	-11.70%	$98.60	-3.72%
1972	$104.09	-0.41%	$11.49	4.60%	$18.09	-1.67%	$102.40	3.41%
1971	$104.52		$10.99		$18.40		$99.02	

Average Annual % Change

1971 - 1983/84		-2.93%		-2.39%		-3.64%		-4.55%
1971 - 1975		-3.76%		-0.50%		-11.18%		-5.82%
1975 - 1979		-1.68%		1.51%		-0.17%		-2.91%
1979 - 1983/84		-3.35%		-7.94%		0.90%		-4.90%

TABLE_VI.13 (cont'd)

Year	Anaesthesia # per Cap.	Anaesthesia % Change	Therapeutic Services # per Cap.	Therapeutic Services % Change	Psychotherapy # per Cap.	Psychotherapy % Change	Refractions # per Cap.	Refractions % Change
1983/84	0.191	3.74%	0.262	6.68%	0.223	-7.36%	0.037	-4.62%
1982/83	0.184	-0.39%	0.245	3.90%	0.241	-6.81%	0.038	-8.82%
1981/82	0.185	6.27%	0.236	8.77%	0.258	11.62%	0.042	-11.48%
1980/81	0.174	6.17%	0.217	7.57%	0.231	8.75%	0.047	-12.22%
1979	0.164	-2.27%	0.202	1.80%	0.213	9.19%	0.054	-5.05%
1978	0.168	0.84%	0.198	4.05%	0.195	10.50%	0.057	-0.66%
1977	0.166	4.45%	0.191	1.31%	0.176	-2.13%	0.057	-7.76%
1976	0.159	1.76%	0.188	1.24%	0.180	47.69%	0.062	14.31%
1975	0.156	1.40%	0.186	-3.75%	0.122	18.71%	0.054	-8.97%
1974	0.154	21.35%	0.193	.00%	0.103	18.76%	0.060	-3.31%
1973	0.127	14.10%	0.193	0.03%	0.087	6.46%	0.062	6.64%
1972	0.111	-1.56%	0.193	-2.81%	0.081	13.89%	0.058	7.89%
1971	0.113		0.199		0.071		0.054	

Average Annual % Change

1971 - 1983/84		4.46%		2.33%		9.96%		-3.16%
1971 - 1975		8.43%		-1.65%		14.34%		0.31%
1975 - 1979		1.17%		2.09%		14.92%		-0.14%
1979 - 1983/84		3.91%		6.72%		1.18%		-9.33%

	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change	Fee-adj. Cost per	% Change
1983/84	$13.99	-2.00%	$3.80	-3.99%	$6.53	1.82%	$9.78	4.90%
1982/83	$14.28	-1.87%	$3.96	-9.44%	$6.42	4.70%	$9.32	-8.65%
1981/82	$14.55	0.63%	$4.37	-0.74%	$6.13	-1.71%	$10.21	1.58%
1980/81	$14.46	4.12%	$4.41	-0.20%	$6.23	0.22%	$10.05	-6.48%
1979	$13.88	-0.47%	$4.42	27.45%	$6.22	-7.92%	$10.74	-4.42%
1978	$13.95	-2.43%	$3.46	1.60%	$6.76	2.29%	$11.24	2.75%
1977	$14.30	6.06%	$3.41	-3.22%	$6.60	-4.97%	$10.94	0.37%
1976	$13.48	2.37%	$3.52	2.27%	$6.95	-14.16%	$10.90	-1.82%
1975	$13.17	1.11%	$3.45	-9.81%	$8.10	-19.50%	$11.10	-6.00%
1974	$13.03	-22.41%	$3.82	-1.64%	$10.06	-5.91%	$11.81	-3.42%
1973	$16.79	-7.69%	$3.88	-2.81%	$10.69	0.55%	$12.23	-2.60%
1972	$18.19	-0.02%	$4.00	-0.70%	$10.63	-8.68%	$12.56	5.16%
1971	$18.19		$4.02		$11.64		$11.94	

Average Annual % Change

1971 - 1983/84		-2.16%		-0.47%		-4.70%		-1.65%
1971 - 1975		-7.76%		-3.81%		-8.68%		-1.80%
1975 - 1979		1.33%		6.40%		-6.38%		-0.82%
1979 - 1983/84		0.19%		-3.67%		1.23%		-2.32%

surgery and surgical assistance increased significantly in the most recent four years, the former in conjunction with falling relative average fees, the latter with flat fees. Rates of minor surgery were also up over this period as relative average costs fell. It is particularly interesting to note that in obstetrics, a service category safely categorized as non-discretionary, there is little utilization change per capita despite steady erosion in relative fees, with the result noted above: fee-adjusted obstetrical costs per capita were down 47 percent over the twelve years. Part of this rapid decline in fee-adjusted cost per obstetrical service, and in particular the dramatic price reduction in 1975 and 1976, is the result of a shift in method of payment for obstetrical services. Prior to this, obstetrical care was paid as a composite fee; the change resulted in the payment, _a la carte_, for visits and the delivery separately. But only the actual delivery was henceforth included in "obstetrics". Thus, while volume was not affected, costs appear to have fallen because the delivery fee alone was far less than the earlier composite. In fact, information from MCIC suggests that the result of this shift was sharply higher obstetrical costs more broadly defined (Thomson, D., 1985, personal communication). The flat utilization and generally falling fees over the rest of the period seems, however, consistent with the more general Quebec story of holding fees down and closing off avenues of utilization rebound.

There was evidently some unit or fee item shuffling as well in anaesthesia from 1972 to 1974. What is less easily explained in that manner is the 1977 increase of 4.5 percent in anaesthetic use per capita. Rates for both major and minor surgery were down sharply. But the relative average cost for anaesthesia fee items was up a considerable 6 percent. A major jump in the relative cost of therapeutic services in 1979 has been followed by sharp increases in utilization ever since. Finally, we find evidence of more fee item repackaging within psychotherapy, with relative average cost down 31 percent from 1974 to 1976 while per capita utilization rose 75 percent.

This analysis of specific services for Saskatchewan brings to light the fact that even this level of disaggregation is probably insufficient for identifying relative behavioral utilization shifts within sets of substitutable fees. Such an analysis, even for one province, is clearly worth doing, and well beyond the scope of this project.

In the final table of this chapter (Table VI.14) we close as for previous provinces with a look at Saskatchewan's experience from the perspective of the physician. Once again we employ a physician supply series that contains far more than clinical full-time-equivalent stock. In this case we have used the Annual Report classification, "Registered Physicians", being all physicians registered with the provincial licensing College. The number of such practitioners increased 37 percent over the twelve years, or 26 percent faster than the general population. Despite this growth, we find once again increasing service provision per physician, up 16 percent over the twelve years. With real fees in this province holding up relative to general price growth, this resulted in a 1.2 percent per annum growth in real payments per physician.

TABLE_VI.14

EXPENDITURE AND UTILIZATION PER PHYSICIAN, SASKATCHEWAN

Year	No. of Registered Physicians	% Change	Payments per MD	% Change	Real Payments per MD	% Change	Fee Index	% Change	Fee-adj. Payments per MD	% Change	Population per MD	% Change
1983/84	1329	0.61%	$109,518	8.21%	$39,452	2.32%	2.410	7.21%	$45,443	0.93%	726.7	0.79%
1982/83	1321	0.46%	$101,212	22.05%	$38,557	10.14%	2.248	20.34%	$45,023	1.42%	721.0	0.63%
1981/82	1315	4.03%	$82,929	14.58%	$35,006	1.86%	1.868	13.08%	$44,395	1.33%	716.5	-3.81%
1980/81	1264	2.43%	$72,377	18.94%	$34,367	7.98%	1.652	13.54%	$43,811	4.75%	744.9	-1.75%
1979	1234	1.90%	$60,853	6.97%	$31,827	-1.98%	1.455	8.42%	$41,824	-1.34%	758.1	-1.13%
1978	1211	0.00%	$56,889	10.95%	$32,471	1.83%	1.342	6.42%	$42,391	4.25%	766.8	1.05%
1977	1211	6.41%	$51,273	0.80%	$31,886	-6.66%	1.261	6.77%	$40,661	-5.60%	758.9	-4.80%
1976	1138	3.55%	$50,867	13.38%	$34,162	5.46%	1.181	8.85%	$43,071	4.16%	797.2	-1.55%
1975	1099	3.29%	$44,864	10.30%	$32,393	-0.45%	1.085	11.97%	$41,350	-1.49%	809.7	-2.13%
1974	1064	3.30%	$40,674	1.37%	$32,539	-8.60%	0.969	3.30%	$41,975	-1.87%	827.4	-3.19%
1973	1030	4.25%	$40,123	5.22%	$35,602	-2.16%	0.938	3.88%	$42,775	1.29%	854.7	-5.17%
1972	988	2.17%	$38,134	10.44%	$36,387	5.38%	0.903	2.85%	$42,230	7.38%	901.2	-1.87%
1971	967		$34,528		$34,528		0.878		$39,326		918.4	
Average Annual % Change												
1971 - 1983/84		2.69%		10.10%		1.12%		8.78%		1.21%		-1.93%
1971 - 1975		3.25%		6.77%		-1.58%		5.43%		1.26%		-3.10%
1975 - 1979		2.94%		7.92%		-0.44%		7.61%		0.29%		-1.63%
1979 - 1983/84		1.87%		15.82%		5.52%		13.45%		2.10%		-1.05%

SUMMARY

Thus, physician supply growth was slightly faster (relative to population) in Manitoba than in Saskatchewan, growth in service provision per physician was slightly slower. But the major difference between the two provinces was that in Manitoba real fees fell 20 percent while in Saskatchewan they fell one percent. The result of this combination was a gain in real per physician payment of 14 percent in Saskatchewan, as against a fall of 4 percent in Manitoba.

One suspects by this point that examining other provinces at this level of detail would not add significantly to our body of knowledge. There were some hints of association between relative fees and service provision, but they were as often hints of negative as of positive association. An inverse association between overall fees and per physician servicing is entirely theoretically consistent with positive associations between servicing and relative fee movements among specific service categories. But inverse associations between service-specific relative average costs and servicing per physician or per capita are not inconsistent, if they reflect fee item repackaging or shifts in the mix of service provision within a service category. Thus, this level of service detail and fee item specificity (or lack of) is a mixed blessing. A more reliable test of behavioral responses requires a careful and even more detailed packaging of substitutable services, or of discretionary and non-discretionary services, where within the former or between the latter there are significant shifts in relative fees. Service categories at the level of disaggregation reported in published sources leave the analyst vulnerable to a combination of undocumented fee item alterations, additions or deletions, plus lack of service category-specific fee indexes.

The detailed examinations of provincial experiences in these three chapters have not, however, been without value. First, they have served to confirm, four times, that there is no single monolithic Canadian association between fee and servicing experience. Real fees were down sharply in Quebec and up significantly in B.C. Utilization per capita and per physician forged ahead in both (at least until the fee repackaging in Quebec). Real fees were down less dramatically in Manitoba and flat in Saskatchewan; utilization per capita and per physician was up more moderately in both. If there is a consistent Canadian story evident in the experience of these four provinces, it has two parts. First, somehow, no matter how rapid the growth in physician supply, service provision per physician is maintained, even in the face of slow population growth. Second, per physician servicing growth is not sufficient to maintain real incomes in the face of serious efforts at fee containment. We return to these themes in Chapter 8.

But a second benefit of these province-specific analyses has been to provide a detailed documentation of the components underlying the growth in utilization. If there is a common theme here, it is surely the growth in laboratory services and other diagnostic and therapeutic procedures, and the decline of hospital visit rates concurrent with the squeezing of bed capacity.

In the following chapter we attempt to place our analyses in the context of past examinations of the medical services price-use linkage.

DATA APPENDIX - MANITOBA

The basic data on which most series in the seven tables are based are from the Manitoba Health Services Commission's yearly publication, Annual Statistics. These are denoted below by year of title, e.g. AS8081 is the publication Annual Statistics 1980/81, of unknown publication date but containing the relevant data for that fiscal year. In earlier years, the data came from the Commission's Statistical Supplement to the Annual Report (denoted SS).

As described in some detail in the text, it was necessary to convert expenditure and utilization data for 1979/80 and all subsequent years to a basis comparable with the earlier years. In 1979/80 statistics began to be reported on a date of payment basis, and payments were accelerated by two weeks. Having no ready access to date of service data for the later years, we were forced to apply a somewhat arbitrary process of shifting estimated payments for the last two weeks of 1979/80 into 1980/81, and shifting all other years' payments ahead a corresponding two weeks. While we believe this improves the intertemporal comparability of the published data, the tables in this section suggest that process is incomplete. It remains as a future project to gather the necessary date of service data. As noted in the text, all published utilization data were scaled (up or down) by the ratio of adjusted to published expenditures, thus maintaining cost per service as implied by the data in the annual reports.

Table VI.1

Total cost is from AS8384, p.30; AS8283, AS8182, and AS8081, all p.31; AS7980, p.32; AS7879, p.42; AS7778, p.40 for calendar year 1977; AS76, p.40; SS75, p.39; SS74, p.48; and SS71, p.46. Population data for 1977 through 1982/83 are from Statistics Canada (1984), Appendix B, p.127 as of October 1. For 1983/84, the population as of October is from Canadian Statistical Review (monthly), as are population figures as of July 1 for all earlier years. The consumer price index is taken from Barer and Evans (1985), Table 8.

Table VI.2

The fee index is from Barer and Evans (1985), Table 8.

Table VI.3

The data for each year are from the respective sources cited for Table VI.1. General practice consultations and visits is the sum of four rows under the general practice column - consultations, office visits, hospital visits and special calls (or home visits prior to 1980/81). Specialist consultations and visits is the sum of the same four rows, under the "medical specialties", "surgical specialties" and "technical specialties" column heads. Other medical services is the aggregation down all remaining rows and across all four column heads. Then each resulting figure is divided by the fee index and the population. For 1979/80 and later, the data are adjusted for comparability as described above and in the text.

Tables VI.4, VI.5 and VI.6

Sources are as for Table VI.3. These tables provide the detailed cells aggregated to produce Table VI.3. The columns of Table VI.6 will not aggregate to the relevant column of Table VI.3, as a minor "miscellaneous" category has not been included. It amounted to about $0.73 per capita in 1982/83.

Table VI.7

The number of physicians is as of December 31, taken from Canada, Department of National Health & Welfare (1985), Table 1, for 1983; from *Canada Health Manpower Inventory, 1983*, Table 21.3 for 1972 to 1982; and from *Canada Health Manpower Inventory, 1982*, Table 21.3 for 1971.

DATA APPENDIX - SASKATCHEWAN

Because the Swift Current Health Region was not included in the expenditure, utilization, and physician supply data contained in the Saskatchewan Medical Care Insurance Commission's (MCIC) Annual Reports for the period to and including 1980/81, but was included thereafter, the Saskatchewan tables and analyses are based on a combination of published and unpublished data. In particular, data for 1981/82 through 1983/84 excluding Swift Current were kindly provided by Mr. Darrell Thomson and staff, in the Program Analysis and Review Section of the MCIC. These data are referenced below as MCIC unpublished; data from the annual reports are denoted ARxx, or ARxxyy, where xx and yy are the final two digits of the respective calendar or fiscal years covered by the annual report. They are not publication dates.

The data requested from Mr. Thomson for 1981/82 through 1983/84, all excluding Swift Current, were: covered population, registered physicians, and number of services and payments for each type of service reported regularly in the annual reports. The data thus produced exclude services provided by and payments to physicians practising in the Swift Current region. If patients of this region received services outside the region, such services and payments will be included in our data series, whereas services rendered by Swift Current region physicians to beneficiaries from outside the region will be excluded.

Table VI.8

Total cost and population for 1981/82 through 1983/84 are from MCIC unpublished. For 1980/81, total cost is from AR8182, Table 10, p.31, as "payments for all physician services"; population is from Table 7, p.28, as population insured for physician service benefits. Other years are as listed below:

Data year	Source	Total Cost	Population
1979	AR80	Table 9, p.31	Table 7, p.28
1978	AR79	Table 9, p.35	Table 7, p.32
1977	AR78	Table 9, p.33	Table 7, p.31
1976	AR77	Table 9, p.37	Table 7, p.35
1975	AR76	Table 10, p.37	Table 8, p.35
1974	AR75	Table 10, p.29	Table 8, p.27
1973	AR74	Table 10, p.29	Table 8, p.27
1972	AR73	Table 11, p.29	Table 8, p.27
1971	AR73	Table 11, p.29	Table 8, p.27

The CPI is as for previous provinces. Real cost per capita is total cost divided by the CPI and the beneficiary population.

Table VI.9

The fee index is from Barer and Evans (1985); real fees are the fee index divided through by the CPI. Fee-adjusted cost per capita is cost per capita from Table VI.8 divided by the fee index.

Table VI.10

The consultations and visits category was created as the sum of: complete assessments, partial assessments (or specific assessments for 1971 to 1973), minor assessments, special calls and emergency visits, hospital care, and consultations. Diagnostic services sums laboratory services, diagnostic radiology and "other diagnostic procedures". "Other services and procedures" is the sum of the specific services included in Table VI.13.

The years 1981/82 through 1983/84 are from data provided by MCIC, unpublished. Data on cost by service category are from the same sources as for total cost cited above for Table VI.8.

Tables VI.11, VI.12 and VI.13

The cost data for specific types of service use as for Table VI.10. Data on number of services, necessary to the computation of services per capita and fee-adjusted cost per service, are taken from the following sources: for 1981/82 to 1983/84, from MCIC unpublished; for 1980/81 from

AR8182, Table 9, p.30; for 1979 from AR80, Table 8, p.30; for 1978 from AR79, Table 8, p.34; for 1977 from AR78, Table 8, p.32; for 1976 from AR77, Table 8, p.36; for 1975 from AR76, Table 9, p.36; for 1974 and 1973 from AR75 and AR74 respectively, Table 9, p.28; for 1972 and 1971, from AR73, Table 10, p.28.

Fee-adjusted cost per service is total payments for each service category, divided by the fee index and the number of services provided of that type.

Table VI.14

The number of registered physicians is from MCIC unpublished for 1981/82 through 1983/84, from AR8182, Table 17, p.39 for 1980/81; AR80, Table 16, p.39 for 1979; AR79, Table 16, p.43 for 1978; AR78, Table 16, p.41, for 1977; AR77, Table 16, p.45 for 1976; AR76, Table 17, p.45 for 1975; AR75, Table 17, p.37 for 1974; AR74, Table 16, p.35 for 1973; and AR73, Table 17, p.35 for 1971 and 1972.

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Chapter 7

Review of Other Experiences

Previous chapters have analyzed the Canadian experience with fixed-fee reimbursement and its impact on health care expenditures. This chapter reviews published evidence on the link between fees and utilization or expenditures. The main body of this evidence focuses on the effects of changes in the reimbursement rates for the U.S. Medicare and Medicaid programs.

The degree to which reductions in physician reimbursement rates are effective in controlling program expenditures depends on whether or not physicians can and do react to reduced fees, and specifically on whether or not they will "induce" demand to compensate for their income loss. The literature examining the issue of "supplier-induced demand" (SID) is extensive and controversial, especially since the implication of SID is that standard neoclassical economic theory is incapable of explaining behavior in the medical marketplace. The traditional assumptions of consumer sovereignty, exogenously determined demand, and price-equilibrating markets are challenged. As Reinhardt (1985, p. 188) has observed, "Those who question the existence of a stable demand constraint on the physician's price-output decisions are assaulting one of the crucial pillars of the neoclassical framework. It is eminently understandable that the guardians of that framework parry such assaults with vigor."

This chapter proceeds by developing a framework for classifying the voluminous literature on the theory and evidence of SID. This permits us to identify from this larger body of research a subset of studies that bear directly on the fee-utilization (and expenditure) relationship. A review of this subset is then provided, the present "state of affairs" is assessed, and the implications of the SID literature for current policy directions are discussed.

Classification of Supplier-Induced Demand Studies

The issue of supplier-induced demand has received much attention from economists and other health care researchers. The extent of this interest, and debate, is reflected in the volume of literature produced on the topic over the past two decades. The purpose of this section is not to review the entire body of literature, but rather to cull from it those studies that are directly relevant to the subject of this monograph - that is, the potential for using fee schedules to reduce or moderate third party expenditures on health care. In order to focus attention on the subset of relevant studies, however, a brief review of the relationship of these studies to the broader literature on supplier-induced demand is necessary. What follows is a classification of the major types of research which allows the identification of the available evidence on the relationship between reimbursement rates and program expenditures. The studies cited below from other subsets of the SID literature are intended to provide representative examples, rather than an exhaustive bibliography. Indeed, comprehensive literature reviews exist elsewhere (Sloan and Feldman, 1978; Juba, 1979; Mitchell and Cromwell, 1981; Rochaix, 1985a, 1985b).

The ability of physicians to induce demand has been analyzed both theoretically and empirically by three groups of individuals: those who believe that it exists, in varying degrees (and purport to prove it theoretically, identify it empirically, or do both); those who deny that it exists (either in theory or in practice), and those who are not quite sure about its existence or extent. Membership in these groups is not stable over time, although the records of some economists suggest that they will be life-long members of one group or another. Nevertheless, much effort (and journal space) has been devoted to attempts to convince either the neoclassicists (the non-believers) that they are wrong, or their critics (the believers) that they are wrong, or to persuade the agnostics to join one of the camps.

The majority of attempts to prove or refute the hypothesis of supplier inducement have focused on the relationship between the supply of physicians and a variety of factors, including price (or fees), utilization (both medical and hospital), expenditure on health care, physicians' incomes, patients' health status, or some combination of the above (Evans, 1976, 1974a; Evans and Wolfson, 1978; Fuchs, 1978; Hemenway, 1985; Reinhardt, 1978; Richardson, 1983; Redisch, 1978; Redisch et al. 1981).

Examining (or predicting) the impact of supply variations provides a logical starting point in the debate on supplier inducement because the expected response to increases (or decreases) in supply differ in the neoclassical model and the "discretionary behavior", or SID model.

Neoclassical theory postulates that an increase in supply will, ceteris paribus, depress price until an equilibrium price and quantity are established such that no excess supply remains. Because the demand curve facing an individual physician will have shifted left due to the increase in supply (indicating a decrease in demand at each and every price), price-taking physicians will experience a decrease in income. Thus the total effect of increasing the physician stock would be to decrease price, increase aggregate utilization, decrease services supplied per physician and decrease average income, with the magnitudes of the changes being determined by the price elasticities of the demand and supply curves.

The "discretionary behavior" model challenges the basic tenet of the neoclassical school - that is, the assumption of an exogenous consumer demand function (i.e. the independence of demand and supply). The basis for rejecting the independence of demand and supply rests on the asymmetry of information between providers and consumers of health care. This asymmetry is responsible for the existence of a principal-agent relationship between the patient and physician, as well as for the potential misuse of this relationship by the physician. Deviations from "perfect agency" occur when the physician recommends (for a variety of reasons which will be discussed later) a different type (i.e. quality or mix) or quantity of care than patients would have chosen if they had identical medical information. When this occurs, the consumer is no longer sovereign in the demand-determination process, and "demand" becomes endogenous.

The existence of endogenous demand implies that an increase in the supply of physicians need not (and likely will not) depress prices, incomes or the number of services provided per physician. This neoclassically perverse result obtains because physicians have sufficient discretionary control over utilization (defined as the ex post observation of "demand") either to increase prices while maintaining a given level of demand for their services or to increase demand in response to price decreases such that their income does not fall (or at least does not fall by as much as it would have in a neoclassical model). Thus an increase in supply may result in one or more of increased fees[1] constant workload, or increased incomes.

The results of studies examining the effects of variations in supply generally tend to support the discretionary behavior model. Prices, utilization and incomes tend to be higher in areas with high physician/population ratios. (See, for example, Fuchs (1978), Evans and Wolfson (1978), Hemenway, (1985) and Redisch et al. (1981)). These findings and similar ones by other investigators have led some observers to conclude that traditional economic theory -- which maintains the separate and independent decision-making of suppliers and demanders brought together only by market transactions at a given price --is invalid and dangerously misleading for the analysis of the health care market. Yet in a theme that has come to characterize much of the discussion in the literature[2], critics of SID have countered that the observed phenomena are explicable within the framework of a neoclassical model. They suggest that apparently perverse findings can be explained by the existence of permanent excess demand and/or difficulties associated with accurate measurement of prices. The opportunity cost of patients' time, and their travel costs are affected by increases in supply, but are not reflected in the observed nominal prices typically employed in empirical studies. Thus the findings noted above can be "accommodated" while retaining the assumption of consumer sovereignty in the demand formulation process.

For our purposes, the family of studies examining reactions to changes in physician stock or flow is of limited usefulness because typically fees are assumed to be flexible and endogenously determined. Thus the behavioral response (on the part of both physicians and patients) is a function of fees only insofar as fees are a function of supply. When fees are held constant, as in a public health insurance system, the supply-utilization relationship is a direct one.[3] The response of interest, from the policy perspective of a third-party reimburser, is how physicians will react to exogenous changes in fee schedules, and what effect these reactions will have on expenditure. And as one economist notes, " Physician-population ratios at best are an indirect measure of the physician's financial interest in inducing demand" (Rice, 1984; p. 132).

An alternative approach to the assessment of SID is to examine the extent to which imperfect agency, if it exists, affects utilization decisions. This approach, which has received limited attention, differs from the previous one in that it addresses directly the fundamental rationale for supplier-inducement -- that of asymmetric information and the imperfect agency problem it creates. On a theoretical level, the implications of imperfect agency seem straightforward (Arrow, 1963;

Pauly and Satterthwaite, 1981). However, empirical studies have failed to measure, or have been unable to confirm (other than in an implicit or ancedotal form) abuses of the principal-agent relationship. Studies indicate that physicians as patients tend to use more health care per capita than do non-physicians (Bunker and Brown, 1974; Hay and Leahy, 1982),and that the extent of consumer ignorance may not be as great as some proponents of the SID theory would suggest (Pauly and Satterthwaite, 1981). The problem with this approach and with the empirical results it generates is that they are inconsistent with both i) the observation of higher utilization in areas of high physician density accompanied by no discernable corresponding improvement in health status (Richardson, 1983), and ii) the large inter-regional variations in the type and amount of utilization for otherwise identical conditions (Vayda et al., 1976).

Given the difficulty of interpreting results from numerous SID studies, and especially of attempting to reconcile results with either the neoclassical or SID paradigms, it is not surprising that there is a third (and growing) subset of articles dealing exclusively with the difficulties of resolving "the debate". Discussions have centered on a variety of issues: the difficulty - indeed to some the impossibility - of constructing an unambiguous empirical test to distinguish a SID response from that predicted by a neoclassical approach (Reinhardt, 1978; Sweeney, 1979); the inability of econometric techniques to identify SID even if it did exist (Auster and Oaxaca, 1981); the problems associated with inference from aggregate data[4] (Wilensky and Rossiter, 1983; Parkin and Yule, 1984); and the relative merit of employing cross-sectional versus time-series data.[5] The seemingly unending obstacles to devising an unequivocal test of either the SID or the neoclassical hypothesis has led some researchers to conclude that the debate will never be adequately resolved (Hadley et al., 1979; Green, 1978).

A final subset of articles examine, either theoretically or empirically, the effects of exogenous changes in fees on either utilization (both quantity and intensity) or expenditures. While these studies are certainly not insensitive to the problems noted above, they have the advantage of examining the fee-utilization relationship directly. More important, they are therefore the most (if not the only) appropriate studies for analysis of the effects of reimbursement on utilization and expenditures.

Even this subset of the SID literature can be further divided into two categories: studies that examine the effects of the method of reimbursement on utilization, and studies that concentrate on the level of reimbursement. The former category encompasses a large body of literature, and ranges, within the context of the U.S. Medicare and Medicaid systems, from studies suggesting alternatives to the fee-for-service method of payment[6] (Gabel and Redisch, 1979; and papers in Gabel et al., 1980) to articles describing or analyzing alternative methods for calculating the customary, prevailing and reasonbale (CPR) reimbursement rate (Hadley, 1984). Although these studies provide interesting insights about the possible scope for reform of the current system, and/or predict the results of such reform, they do not deal directly with the possibilities for using the present reimbursement system to contain or moderate costs, or to alter existing patterns of care. This evidence comes from the final category of studies - those examining the effects of exogenous changes in the level of fees on utilization and expenditures.

The above classification of the SID literature serves two purposes. First, it restricts the remaining review to studies that provide evidence on the relationship between levels of reimbursement and utilization. Secondly, it reduces the burgeoning SID literature to a manageable subset of studies. Although ideally we would like to limit the set of "admissible evidence" for this monograph to results on the relationship between fee schedule changes and expenditures[7], at this point the classification becomes too fine - only one study would remain. We are therefore forced to include as "relevant" all studies that focus on the effect of reimbursement levels on utilization as well as expenditures.

This subset is composed of analyses of natural or quasi-natural experiments in which exogenous changes in fixed reimbursement rates occurred. With one exception, the body of evidence comes from experiences in the U.S. in which Medicare and/or Medicaid fee schedules were altered, either through changes to reimbursement policies made by the programs, or as a result of general wage and price controls.

The following section begins with a brief examination of the response to fee level changes predicted by both the neoclassical and SID models. The individual empirical studies are then reviewed.

Determinants of Supply and Utilization of Medical Care under Fixed-Fee Reimbursement Systems:

The response to changes in a fixed fee schedule in a neoclassical model is fairly straightforward. If the fee schedule is decreased (through either a nominal or real fall in fees), then physicians will be less willing to sell their services at the decreased prices and, with a stable demand curve, a situation of excess demand will result. This excess demand will be exacerbated if a decrease in reimbursement rates also implies a decrease in the co-insurance payment for patients, as is the case if U.S. physicians bill Medicare on an assigned basis. In response to this situation of excess demand, physicians will charge an additional fee to patients, which patients will gladly pay, so that physicians are compensated for the decrease in the fee schedule. The amount of the extra payment will be determined by the difference between the equilibrium price and the reimbursement price.

Similarly, if fee schedules are increased across-the-board, physicians will be willing to supply services in excess of the equilibrium quantity. At the prevailing price, excess supply will exist, and physicians will be forced to pay rebates to patients, either in cash or in kind, in amounts sufficient to restore equilibrium.

The SID proponents understandably have difficulty accepting this neoclassical story, both because of its heroic assumption of exogenously-determined stable demand curves and, moreover, because the predicted responses have not been supported by reality[8]. There was ample evidence of extra charges when reimbursement was deemed by physicians to be "too low" (witness the routine practice of extra billing over and above the Medicare rates in Canada[9], and the frequency of non-assigned billing in the U.S. Medicare system). But there is no evidence to suggest that issuing rebates has been or is a common (or even isolated) practice.[10] Presumably the neoclassicists would argue (with the aid of the medical profession) that this is because fees have never been "too high".

What has been observed however is that fee increases in the U.S. Medicare and Medicaid system have resulted in increases in medical care utilization and that fee decreases have led to both increased and decreased use in various situations. The ability of each of the models to accommodate these findings will be discussed when the results of the studies are reviewed below. Prior to that, however, we briefly summarize several approaches to modelling physician behavior, because theories of physician behavior often (implicitly) underpin studies of the fee schedule-utilization relationship.

Economists have used a variety of approaches to model physicians' behavior, beginning with profit- or revenue-maximizing models, progressing to utility-maximizing models, and eventually proposing extended maximizing or multi-objective utility models[11]. (For taxonomic purposes, we consider the satisficing, or target income models to be derivatives of the multi-objective models.)

The inadequacy of the profit-maximization model quickly became obvious when economists observed relatively price-inelastic demand for physician services, which suggested that discretionary power could and should be exerted until fully exhausted. More important, the profit- or revenue-maximizing model pitted the physician against himself. He was expected to maximize profits by minimizing costs, including the total wage bill of the firm. Alternatively, he was supposed to maximize revenue, which by definition, included his income from the firm. The conflict in this dual role implied by profit-maximizing models understandably put the physician in an awkward and unrealistic position. Substituting net income maximization for profit maximization created additional problems; it predicted that physicians would maximize income by maximizing working hours, the only constraint being the number of hours in a day. For this reason income maximization models gave way to multi-objective utility maximization models, with the initial arguments in the function being income and leisure, both of which were assumed to yield positive utility.

The income-leisure specification, however, assumed that the physician was constrained in his behavior by an exogenously-determined demand curve and as such, ignored the dominant role of the physician as the patient's advocate. The notion of incorporating induced demand as an argument in the physician's utility function was proposed by Evans (1974a), when he introduced the concept of "the extent to which the physician exerts discretionary influence to increase demand" into the utility function. Since then, the arguments proposed for inclusion in the physician's utility function, either implicitly or explicitly, have grown in direct proportion to the number of economists modelling physician behavior[12].

Reinhardt (1972) introduced the notion of "preferred practice styles" into the physician's utility function to explain the observed underuse of less expensive auxiliary personnel, which otherwise appeared to be inconsistent with profit-maximizing (specifically, cost-minimizing) behavior. Other arguments that have been introduced, either as objectives or constraints in utility models include: a preference for treating "interesting" cases (Feldstein, 1970); professional ethics (Reinhardt, 1978); patients' welfare (Richardson, 1981); the "appropriate care" per patient, as determined by the physician's own standards (Woodward and Warren-Boulton, 1984); professional uncertainty (Wennberg, 1982); and threat of professional audit (Dyck et al., 1977).

These models have been formulated and/or tested with the assumption of various degrees of autonomy for consumers in the decision-making process. Feldstein (1970) assumed that demand was exogenously determined; McCarthy (1985) contended that demand factors exerted a significant binding constraint on equilibrium price and quantity; Richardson (1981) assigned a less restricting but not insignificant role to consumers' demand decisions; and Evans (1974a, 1978) argued that demand was sufficiently endogenous, especially in systems of universal, first-dollar insurance coverage that it made the role of providers in determining utilization paramount.[13]

The studies reviewed below were typically designed to test the influence of suppliers in determining the amount of medical care consumed by examining the relationship between exogenous changes in fee schedules and subsequent shifts in utilization. As one might expect, the results are consistent, to an extent, with both the neo-classical and the SID hypotheses, although the complexity of the assumptions required to explain the results differs considerably in the two cases. Not surprisingly, the role afforded to price as a market-clearing mechanism depends on who is doing the explaining.

A large body of evidence on the relationship between reimbursement levels and utilization and expenditures comes from the natural experiment created by the imposition of price controls in the U.S. under the Economic Stabilization Program (ESP). During the ESP period (1972-74) price increases, including the price of physicians' services and Medicare and Medicaid reimbursement rates, were limited to a maximum of 2.5 percent per year. A group of investigators used data from the California Medicare and Medicaid programs to assess the impact that price controls had on utilization, reasonable charges, the Medicare and Medicaid portions of physicians' income, procedure composition, and total program costs. The results of their research have been reported in a number of articles and working papers (Hadley and Scanlon, 1979; Hadley and Lee, 1979; Holahan et al., 1979; Holahan and Scanlon, 1978).

The investigators stated that the purpose of their research was fourfold (Holahan et al., 1979; p. 189):

1. To determine how price controls affected physicians' billing behavior (actual charges) and the course of prices paid (reasonable charges);
2. To determine if shifts in billing occurred among procedure codes available for related procedures;

3. To identify physicians' Medicare and Medicaid supply responses to the controls;
4. To examine how changes in reimbursement rates and changes in service volume affected Medicare and Medicaid program costs.

The analysis was based on actual Medicare and Medicaid claims of over 3600 physicians in Northern California. Annual data by program and specialty were used to compare utilization and cost during the price control (1972-74) and non-control (1975) years.

A number of interesting results emerge from the analysis[14], including the main conclusion that although price controls were successful in constraining the rise in physicians' fees (which was held to around the ESP target of 2.5 percent per year), they were not successful in moderating or reducing the rate of increase of Medicare expenditures for physicians' services. Expenditure increases were the direct result of increases in the quantity and complexity of services supplied by physicians to Medicare patients. The number of services billed to Medicare grew by 9.4 to 10.9 percent (depending on specialty) between 1972 and 1973. The rate of increase for 1973-74 was 8.4 to 14.6 percent. Correspondingly, gross incomes of physicians increased by 10.1 to 12.0 percent during 1972-73, and by 12.4 to 19.3 percent between 1973 and 1974. The overall effect was that, "...payments from Medicare to our sample physicians grew more during the two years of price controls than in the year after" (Holahan et al., 1979, p. 190). In 1975, the year after controls were lifted, actual charges to Medicare patients rose approximately 23 percent but the quantity of services delivered fell by as much as 9.3 percent (for general practitioners).

The investigators found that the ESP program had little or no impact on Medicaid charges, services consumed or program costs, presumably because Medicaid fees were effectively controlled prior to the introduction of ESP.

In an extension of the original analysis, simulation modelling techniques were used to predict the effects of changes in both private (i.e. non Medicare/Medicaid) and program fees on the supply of services to Medicare assignment patients and Medicaid patients (Hadley and Lee, 1978, 1979). The results supported the hypothesis that the supply of services provided to beneficiaries of fixed-fee public programs (in a mixed public/private system) is inversely related to the level of private fees obtainable. The (statistically significant) regression coefficients implied that a 10 percent increase in private fees relative to Medicare and Medicaid reimbursement fees would reduce the quantity of services supplied to those programs by approximately 14 percent and 9 percent, respectively. As well, a relative increase in private fees was likely to cause a substitution of non-assigned for assigned billings. Moreover, because the ESP program reduced the differential between private and public program fees, it was estimated that the supply of services to Medicare patients was as much as 17 percent higher (15% for Medicaid patients) than it would have been without ESP. For Medicaid patients, the results indicated that, "... both the participation rate and the number of Medicaid patients per participating physician are positively related to the expected average revenue per Medicaid patient and negatively related to the expected revenue from treating a comparable patient on a private basis." (Holahan et al., 1979; p.202)

The evidence from the ESP experience led the investigators to conclude," ...ESP's impact on the supplies of services suggested that, when all fees were constrained, physicians responded by increasing the quantities of care provided to the two public programs", and more importantly that, "...simply limiting average fee growth by itself may not effectively limit undesirable growth in expenditures on physicians' services, at least over a short time period." (emphasis added) (Holahan et al., 1979; p. 204, 207)

The inability of reimbursement level freezes to control the quantity of medical care utilized and program expenditures in the U.S. system is also demonstrated by a second set of studies, again conducted on California physicians (Holahan et al., 1981; Held et al., 1983). These studies analyzed the extent to which Medicaid fee freezes controlled expenditures in the period 1974-76, by comparing utilization rates in this period to the rates observed when fees were increased substantially in 1976. (Average increases of 20 percent for primary care, 30 percent for maternity services, and 9.5 percent for other services occurred as a result of the 1976 fee revision). The results showed that between 1974 and 1976 the average payment per service increased by 11 percent for general practitioners, 14 percent for general surgeons, and 20 percent for pediatricians, in spite of the freeze on fees. The authors demonstrated that changes in the intensity of services billed were primarily responsible for the increase in expenditures. When fees were increased the complexity of services billed decreased by 2 to 6 percent.

Changes in the reimbursement rate structure in Colorado in 1976 provided another natural experiment from which data on physicians' responses to fee changes could be obtained and analyzed. Administrative changes in the Medicare program resulted in substantial relative increases in the prevailing charges (one component of the CPR calculation) of non-urban physicians and relative decreases in the charges of urban physicians. Rice (1984, 1983; Rice and McCall, 1982) analyzed data from the Medicare claims of all 1264 practising physicians in Colorado for the years 1976-1978 in an effort to test the hypothesis that changes in reimbursement rates affect the amount of demand induced by physicians.

The model of physician behavior specified for testing included the amount of demand induced as an explicit argument in the physician's utility function. Demand inducement was assumed to yield disutility to to the physician (and therefore to act as a supply constraint), and was hypothesized to be negatively related to changes in Medicare reimbursement rates. Rice (1981, p. 139) claims that his analytic approach has the advantages of simplicity and the ability to examine directly the fee-utilization relationship:

The model implies that if physicians have the ability to compensate for changes in reimbursement rates then they are exercising demand inducement. Looked at this way, the study provides a more direct examination of demand inducement than do studies that focus on physician-population ratios. Moreover, as Rice points out, the nature of the natural experiment in Colorado produced what, at least to date, has been one of the best opportunities for testing the SID hypothesis because: the fee schedule shock was exogenously determined and apparently occurred without prior notification; the change in reimbursement levels was large enough to have a significant impact on physician incomes (fees increased by 23.7 to 33.5 percent for non-urban physicians); there was sufficient variation in the reimbursement variable (i.e. the change affected different physicians in different ways) to allow for the estimation of reliable regression coefficients; the change was permanent in nature; and, the data base was accurate and comprehensive (over 2 million observations were compiled for the study).

The study examined the impact of the reimbursement rate change on three aspects of practice style: the intensity or complexity of services provided (defined as the change in the average number of relative value units (RVUs) billed per medical service), the number of services provided (excluding initial office visits), and the number of ancillary services (laboratory tests and x rays) ordered.

Results of the regression analyses supported the hypothesis that the amount of supplier inducement is negatively related to the reimbursement rate. Results for service intensity indicated that a 10 percent decrease in the reasonable charge led to a 6.1 percent increase and a 1.5 percent increase in the RVUs per medical and surgical services, respectively. There was also evidence that the number of surgical services was inversely related to both medical and surgical reimbursement rates (with elasticities of -.27 and -.14), although there was no evidence that demand inducement occurred through the provision of more follow-up visits.[15] The quantity of ancillary services provided was also negatively related to fees: a 10 percent decrease in the laboratory reimbursement rate resulted in a 5.2 percent increase in the number of laboratory services ordered per medical service. Rice (1981, p.156) concludes: The results are supportive of the demand inducement hypothesis, at least among the sample of Colorado physicians. Inducement appears to occur most commonly through the provision of more highly intensive medical and surgical services and through the provision or ordering of a greater quantity of surgical and laboratory services.

These studies of the ESP and Colorado experiences with changes in fee schedules are by far the most systematic and analytically rigorous attempts to resolve questions about the relationship between fees and utilization or expenditure. Two other natural experiments have also been analyzed however, and their results will be briefly reviewed.

Responding to the pressures of rapidly rising health care costs, the State Legislature of Massachusetts mandated a 30 percent reduction in the reimbursement rates for Medicaid-sponsored surgical procedures, beginning in February 1976.[16] Schwartz et al. (1981), using Medicaid claims data for 1975 to 1978, analyzed the effect of the fee reduction on the rate of performance of eight elective surgical procedures in the Massachusetts Medicaid population.

The decrease in reimbursement was predicted to result in a decrease in the number of surgical procedures supplied to Medicaid patients, as physicians increasingly refused to treat these patients. The results, however, indicated that, with the exception of tonsillectomies/adenoidectomies, the decrease in surgical fees had little impact on the rate at which surgical procedures were performed.

This result is not surprising to a SID theorist, who would predict that a fall in fees would induce an increase in services per physician in order to compensate for the potential loss of income. The fact that aggregate utilization remained static is consistent with a situation in which, as a result of the decrease in fees, fewer physicians opted to treat Medicaid patients, while those physicians who maintained a Medicaid practice provided more services per patient.

The authors acknowledge that the above scenario provides a possible explanation for the observed phenomena, but they offer two other explanations as equally plausible. They hypothesize that the specific procedures examined might not constitute a significant enough portion of a physician's practice to lead him to decrease provision in response to fee reductions. Alternatively, they suggest that the existence of an excess supply of surgeons prior to the fee cut was responsible for the willingness to provide services even at a reduced rate, especially for relatively expensive procedures such as disc surgery.

The next study analyzed the effects of the alteration in the pattern of fees caused by the introduction of universal health insurance in the province of Quebec. Berry et al. (1978) examined the effect of a change in both the level and type of reimbursement on the delivery of medical services during the five year period immediately after the introduction of the new plan. The Quebec experience is analyzed in detail in Chapter 4 of this monograph. We restrict ourselves here to a reporting of the major findings (with respect to the fee-utilization relationship) reported by Berry et al.

Of the objectives specified for the Quebec study, the one that is most relevant for this chapter is the assessment of the impact of universal health insurance coverage on the level and composition of physician output, the use of physician services by beneficiaries, and the gross receipts of physicians. During the study period (1971-1975) there was no increase in the reimbursement rates for individual services; thus fees were effectively frozen.

The analysis indicated that average quarterly gross payments per active general practitioner rose by 13.4 percent during the five year period, or 3.2 percent, per annum; the yearly increase in payments to general surgeons was significantly less at 0.5 percent. As well, there was a substantial shift in the composition of physician output. The average number of patient visits and consultations per physician (for both general practitioners and general surgeons) decreased by approximately 5 percent per year, while total gross payments per visit or consultation increased by the same amount. The authors attribute this finding to a marked shift from "ordinary" examinations to more costly (and remunerative) "complete" and "major complete" exams. The number of visits to general practitioners decreased by nine percent over the five years but total payments for all services increased by 15 percent, even though nominal fees remained constant throughout.

Gabel and Rice (1985) extended the Quebec analysis by considering the effect of a number of structural changes on physician expenditures. Between 1976 and 1979, the Quebec government introduced a number of changes to the reimbursement system that might be expected to moderate increases in expenditure by reducing the opportunities and attractiveness of generating and/or providing more complex services. Fees for general practitioners were increased by 15 percent in November 1976; specialists' fees were increased by 17.5 percent in January 1977; GP's received additional increases of 6.1 and 5.4 percent in November of 1977 and 1978; the number of procedural codes in the fee schedule was reduced; and measures designed to restrict both individual general practitioner gross incomes (above a specified ceiling) and to moderate the growth of average incomes for both g.p.s and specialists were introduced (see Chapter 4). A comparison of the periods before and after the introduction of these changes showed that the average increase in expenditures for the 1977-1979 period was 9.2 percent; in the three years prior to these initiatives, average annual increases were 10.8 percent.

An excellent summary and review of the studies examining the effects of exogenous changes in physician payment levels (including the studies cited above) can be found in Gabel and Rice (1985). Specifically, they examine the impact of changes in reimbursement on both access to care and program costs.[17] They conclude from their survey of the literature that, "These studies show that freezing or reducing payment levels is not effective in controlling expenditures, because physicians respond by increasing the quantity and complexity of services provided." (p.595)

Current "State of Affairs"

The results of U.S. studies indicate that exogenous changes in fee schedules have not been successful in controlling medical care utilization or Medicare physician expenditures. Reductions in fees have resulted in increases in both the quantity and intensity of services consumed. Yet the mechanism driving these responses remains a contentious issue.

Neoclassicists contend that a fall in the reimbursement rate reduces patients' copayments (which are a fixed percent of the Medicare rate), and that patients respond to the reduced price by demanding more services. Increases in utilization that occur when fees are frozen can be rationalized in one of two ways, both of which depend on the assumption that the price freeze reduces the differential between public program reimbursement rates and private fees, thereby prompting the physician to supply more services under the public plan. In the first case, a situation of excess demand is assumed, and the observed increase in utilization is the result of an increase in supply. Alternatively, even though no excess demand exists initially, the increase in supply effectively reduces patient's opportunity cost of seeking care. Patients respond to this reduction by demanding more care.

For a number of reasons however, falling copayments are an implausible explanation for increased utilization. Rice (1981, 1983) has discussed these reasons in the context of his own findings; below we summarize and comment upon his major points.

First, decreases in reimbursement rates will only decrease copayments for patients who either have no supplemental insurance or are treated on an assigned basis. Moreover, for non-assigned services, the reduction in copayment is likely to be outweighed by increased patient liability as the differential between the physician's billed charge and the Medicare reimbursement rate widens. Furthermore, it is difficult to attribute increases in the intensity of services provided to decreases in patient copayments. Most patients are unaware of the relative value units of various procedures and have limited knowledge about the potential mix of services available for managing a given condition. Finally, Rice's research indicates that quantity responses occur most frequently in the areas of surgical procedures and laboratory tests. In the case of surgical procedures at least, it is unlikely that a fall in out-of-pocket prices to patients will stimulate demand. As Barer et al. (1979, p. 48) note, "Whatever leads people to have tonsils or breasts removed, for example, it is unlikely to be the low price of the operation."

The argument that excess demand coupled with expanding supply accounts for increases in utilization in the cases discussed above is extremely difficult to support or to refute empirically. On a theoretical level, however, the notion of permanent excess demand seems inconsistent with the neoclassical tenet of markets in which price equilibrates the quantity of services demanded and supplied. The existence of permanent excess demand implies a permanent market disequilibrium - a possibility that is rarely recognized ex ante by neoclassicists.

Decreased opportunity cost is another phenomenon that is extremely difficult to measure. Presumably travel costs are not affected, ceteris paribus, by an increase in output per physician, but the waiting time for services could conceivably be affected. Acton (1976) has estimated waiting time elasticities to be -0.12 for public ambulatory care, and -0.05 for private ambulatory care. Without measures of waiting time before and after fee schedule changes, it is impossible to determine if elasticities of this magnitude are sufficiently large to account for the observed increases in utilization in the U.S. studies. We suspect that they are not.

At this point, one might wonder if there is any justification for devoting more time and effort to attempts to resolve the SID debate. If positive relationships between fees and utilization have been consistently observed, what is gained by resolving debate over the explanation? The answer is twofold. First, if, fee schedule controls can be used in conjunction with (or can be supplemented by) other policy instruments, then it is important to know who those instruments should be targetted at. As Stoddart and Barer (1981) emphasize, there are dangers in formulating policies on the assumption that utilization is solely patient-initiated, rather than determined jointly by patients and providers. If cost control policies designed to supplement fee controls are consumer-oriented, and utilization is not in fact demand-driven, then they will have little effect. If policy initiatives are targetted at providers, however, their chance of success is greatly improved, either because utilization is indeed supplier-driven or if not, because the physician, in his capacity as agent for the consumer, can be encouraged to modify demands such that utilization is consistent with public policy objectives.

Second, an understanding of the mechanisms underlying utilization responses might help to explain why the Canadian experience with fee controls differs from that of the U.S.. Previous chapters have demonstrated that public control of fees in Canada has been relatively successful in moderating public health care costs. The reason for this success can be attributed, at least in part, to the type of controls and the rate-setting process employed in Canada. Evidence from the U.S. literature suggests that physicians respond to relative differences in public and private fees by supplying more services to non-Medicare/Medicaid patients or increasing the amount of non-assigned (relative to assigned) services provided. The opportunity to alter the mix of public and private patients does not exist in Canada because public insurance is universal and comprehensive. Although physicians may extra-bill in certain provinces and can opt out of the public plan altogether (an act which in Quebec disenfranchises their patients from the public insurance plan) these practices are not commonplace.

The evidence from the U.S. also indicates that considerable procedural recoding and relabelling of services occurs in response to changes in Medicare and Medicaid reimbursement rates.[18] Although this practice is not non-existent in Canada, the single schedule fee structure offers fewer possibilities for relabelling than in the U.S.

Finally, the reimbursement rate-setting process in Canada is characterized by regular bilateral negotiation of schedule levels and structures between governments and provincial medical associations. The continuous negotiated revision of fees undoubtedly mitigates (but does not eliminate!) the desire of Canadian physicians to circumvent fee controls.

Thus, a comparison of U.S. and Canadian experience with changes in fixed-fee reimbursement schedules suggests that Canada has achieved more success in moderating expenditures than has the U.S. because Canadian fee schedule controls are augmented with constraints and initiatives targetted at the suppliers of medical services. Of course, this interpretation of the observed differences does not mean that the SID proponents have finally produced conclusive evidence. But a comparison of the U.S. and Canadian experiences, combined with the evidence from the literature reviewed in this chapter, strongly suggests that the balance of evidence is turning.

FOOTNOTES

1. In a fixed rate reimbursement system, the levers available to the physician are somewhat limited, in that he cannot raise prices to maintain or strive for some "target income". Instead, the physician must rely on increasing either the number of services provided or the complexity of those services. Of course this is strictly true only if the price of every service provided by the physician is fixed, as in the case of universal, single-insurer systems. If the physician's fees are fixed for only a portion of services or patients (which is typically the situation in the U.S. Medicare system), then he or she has the option of charging higher prices to non-Medicare (or non- assigned patients) in response to decreased Medicare reimbursement rates. Ultimately the physician can elect not to treat Medicare patients altogether. We will return to these points later.

2. See Sloan and Feldman (1978) and the response by Reinhardt (1978) for one example.

3. Of course, a public health insurance system (or any universal, fixed-fee system) does not preclude the possibility that changes in supply will affect fees. Supply increases will, in fact, likely exert upward pressure on fees when new fee schedules are negotiated. But the adjustment is not instantaneous, as is assumed in a flexible-price system.

4. Aggregate data use the market area as the unit of analysis, whereas disaggregate data use individual observations of consumers, physicians or physician-firms.

5. For a summary and review of these articles and arguments see Rice (1984) pp. 130-131.

6. For a theoretical discussion of the implications of various payment schemes see Woodward and Warren-Boulton (1984).

7. This is because evidence on a negative relationship between reimbursement rates and utilization, for example, cannot be used to make inferences about the effect that a cut in fees might have on total expenditures. The net effect on expenditures will depend on whether the increased expenditures resulting from increased utilization were greater than, less than, or equal to the savings from decreased fees.

8. Critics of the SID model argue that its adherents typically take this type of ad hoc approach to explaining observed phenomena and refuting the neoclassical model. (See, for example, the approach taken by Evans (1974b) in developing the "discretionary" model.) Supporters of the neoclassical model therefore believe that a major flaw of the SID school is its inability to specify ex ante a model that yields testable predictions; any observations can

be rationalized by SID, ex post of course. What the neoclassicists rarely acknowledge, however, is that their working "model" depends as much upon contorted conditional (and fairly heroic) assumptions and unspecified "tastes" as the SID model does on ad hocery.

9. This practice has been challenged, and somewhat moderated, by the new Canada Health Act (CHA), which financially penalizes provinces that permit extra-billing. But part of the CHA has been criticized and rejected by the medical profession, which stands firm in its support of "the right to extra-bill" and has countered with a challenge of its own over the legality of the new Act.

10. There are anecdotal suggestions that U.S. physicians may in some circumstances not collect Medicare co-insurance, just as it is alleged that under-occupied Canadian specialists may accept self-referred patients and their associated G.P. visit rate reimbursement. Such failure to collect authorized charges in particular cases is consistent with the neo-classical model, but does not go far enough. That model assigns no special significance to a zero price, particularly not to a zero money price. In the neo-classical framework the under-utilized practitioner not only waives direct charges, but compensates patients for their non-monetary costs of attendance. It would be an extraordinary coincidence, at least, if zero money prices were always sufficient to restore equilibrium. Furthermore, in the Canadian system money prices are already zero for almost all patients, and perceptions of physician surpluses are widespread. Yet no cash rebates are observed. The neo-classicist would then have to say that the perceptions must be wrong -- a circular argument.

11. For a comprehensive discussion of these models, their evolution, and the shortcomings of each see Evans (1980).

12. Many of these arguments (i.e. objectives and constraints) are in fact variations of the "discretionary influence" argument.

13. Even the most ardent supporter of the SID model would undoubtedly agree that demand is not wholly supply-determined. Initial consultations, for example, are primarily patient-initiated, and it is difficult to believe that individuals with broken arms or heart attacks seek medical care because physicians induced them to do so. The profile of services for the subsequent episode of care, however, may indeed be strongly influenced, if not wholly determined, by the physician (see Stoddart and Barer (1981)).

14. The analytic techniques and results obtained are described in detail in Holahan and Scanlon (1978), and are summarized in Holahan et al. (1979).

15. Rice, (1981, p. 155) contends that "because the data are based on claims instead of episodes of illness, it is difficult to detect whether inducement occurred for follow-up visits."

16. A 30 percent reduction in the primary care fee schedule was also mandated in February 1976 but rescinded in November of that year.

17. In this chapter we have focused attention on the latter issue, program costs. But studies examining access effects of fee level changes also shed light on the debate about the fee/quantity-supplied relationship. In particular, see the review of Reider's (n.d.) study in Gabel and Rice (1985).

18. In addition to the studies cited in this chapter see, for example, Newman and Lilienkamp (1980) for evidence that physicians can effectively alter service mix in response to financial incentives.

Chapter 8

Summary: Fee Control as Process, Not as Event

Canadian Expenditure Control: The Data

The central point in the Canadian experience, from which the rest of the discussion must proceed, is that the rate of escalation of expenditures on physicians' services *has* been controlled.

From 1971 to 1982, per capita expenditures on physicians' services in Canada rose from $57.91 to $179.02, or 209.1%; in the same period U.S. expenditures rose from $75.26 to $261.63 or 247.6%. The difference in annual rates is not large: 10.8% in Canada and 12.0% in the U.S. But this comparison is quite misleading, because inflation rates were higher in Canada over the 1970s. In constant, 1971 dollars (deflated by the All-Items Consumer Price Index), Canadian expenditures rose only to $68.20 or 17.8%. In the U.S. one must choose between price indices which tell different stories about inflation rates: expenditures on physicians' services in 1982 either $109.96, or $121.39, depending upon whether one deflates by the Consumer Price Index or the implicit price deflator for Gross National Expenditure. The increases are thus 46.1%, or 61.3%, 3.5% per year or 4.4%, depending on how fast one believes the general inflation rate in the U.S. was progressing. But in any case, the U.S. rate of increase was far faster than the Canadian, at 1.5%.

The comparison relative to the general economy yields an even more obvious contrast. From 1971 to 1981, expenditures on physicians' services in Canada moved from 1.32% of GNP to 1.10%, a fall of 16.7%. When the economy collapsed in 1982, health expenditures stayed up, and the percentage rose sharply to 1.24%, but still finished the 1971 to 1982 period down by 6.1%. In the U.S., on the other hand, physicians' services took up 1.48% of GNP in 1971, and by 1981 this had risen to 1.85%. In 1982 it was up again, to 2.01%. (U.S. data for 1983 are available, and show physicians' services expenditure up again at 2.09% of GNP; Canadian data are not yet available, but preliminary indications are that the share will be down from its 1982 level.) (Canadian data are from Canada, Health and Welfare Canada, 1984a; U.S. data are from Freeland and Schendler, 1984, and Gibson, Levit, Lazenby, and Waldo, 1984.)

Thus while the share of U.S. national income devoted to physicians' services was rising by 35.8%, in Canada it was falling by 6.1%, and the contrary trends appear to be continuing. Moreover this divergence is quite clearly associated with the introduction of the universal, public insurance programs in Canada. In the decade prior to 1971, or from 1960 to 1971, expenditures in physicians' services in Canada rose from 0.93% of GNP to 1.32%, an increase of 41.9%, which was somewhat faster than the U.S. increase of 31.0%, from 1.13% to 1.48%. The introduction of the public plans probably gave a boost to the Canadian rate; but if one evens this out by looking at the 22-year period as a whole, the Canadian percentage rises by 33.3%, from 0.93% to 1.24%, while the U.S. rises by 77.9%, from 1.13% to 2.01%.

Going yet farther back, prior to the introduction of Medicare in

Canada, or its U.S. form in the U.S., we can compare data over the period 1950 to 1965. Over these fifteen years, the share of Canadian GNP devoted to physicians' services rose by 34%, from 0.73% to 0.93%. In the U.S. it rose from 0.94% to 1.23%, or 31%. While the U.S. appears historically to have spent a larger percentage of its income on physicians services, the rate of growth of that percentage seems to have proceeded in parallel until Canada "went public". After that, the Canadian rate has been stable or falling, the U.S. has continued to rise. (Earlier Canadian data are from Canada, Health and Welfare Canada, 1979, and Leacy, (ed.) 1983; U.S. data are from Gibson, _op. cit._

Accounting for Control: Reprise

The second major point is that the Canadian control of expenditures has been almost entirely through the control of fees. When one looks at the growth of physician supply per capita in the two countries, for example, the trends in the post-1971 period are remarkably similar. From 1971 to 1982, numbers of (active civilian) physicians per capita rose 26.0%, in the U.S. it rose 28.2%. (Prior to 1971, the Canadian rate of increase was faster, and in the future the U.S. rate may well run ahead. But in the decade after 1971. when the divergence between Canadian and U.S. experience opens up, manpower increases are almost identical.)

Nor can divergences in implicit utilization rates explain the observed differences. The argument that controls on fees will be ineffective because they will be offset by increases in physicians' billings would lead one to expect faster rates of increase in billing activity, adjusted for fee change, in Canada, and indeed as presented in Chapter 3, that is indeed what we observe. Thus this effect can hardly be called upon to explain why expenditures have risen less rapidly in Canada since 1971. But in any case, the Canada/U.S. differences after 1971 are not nearly large enough to have any significant influence on the overall comparison. Between 1971 and 1982, "real" output per physician (constant-fee billings) rose 17.8% in Canada, and 10.2% in the U.S. (see Chapter 3) for a difference of under 7% in eleven years.

One is left with the obvious. From 1971 to 1982, the average level of physicians' fees, Canada-wide, has fallen behind the general level of inflation by 20.6%. In the U.S., physicians' fees have outrun the general inflation level by either 16.9% or 5.9%, depending upon which measure of inflation one uses. Expenditures have risen much less rapidly in Canada, because fees have risen much less rapidly. Those are the brute facts.

The questions of interpretation, of why the U.S. experience with attempts to control fees has been so different? and why billings per physician in Canada have not risen to offset fee control? and what are the crucial behavioural or administrative mechanisms which have led to this result? are all important and challenging questions which will support considerable analysis and debate. But the pursuit of these questions must not be allowed to obscure the central fact. The thing did happen. And as far as we can tell, it is still happening.

The Quantity Response:Where Did it Go?

Yet it is widely believed, and a great many pieces of evidence support the belief, that physicians can to a large extent determine their own workloads by the styles of practice which they choose, for a given patient base. Utilization per patient, after the patient has contacted the physician, is directly influenced by the advice which the physician gives. And this utilization in turn translates into the physician's income. Does the Canadian experience indicate that physicians cannot, in fact, expand utilization in order to maintain their "target incomes", or more generally, to maximize some complex function of income, workload, and professional satisfaction with practice style? The answer seems to be, "It depends".

First of all, utilization certainly does seem to be approximately unitary elastic with respect to physician capacity, or put another way, increases in physician supply translate directly into increases in utilization of physicians' services. As noted in Chapters 2 through 6, the steady increase in physician supply in the periods both before and after 1971 has been associated with increases in fee-adjusted billings per physician. Neither the national nor the province-specific data show any sign of saturation, of rapid increases in manpower resulting in a fall in activity per physician. The rate of increase in activity per physician does appear to be slowing down over time, but there are other potential explanations for that.

Changes in fee-adjusted billings are, as we have emphasized, quite sensitive to the details of fee schedule structure. But the Quebec data reported in Chapter 4, particularly Table 4-10, give a very clear picture of the underlying dynamics. The Quebec Annual Reports define a sub-category of services, "contacts-patients" or base services, which include office examinations, consultations, surgical procedures, psychiatric treatments, but exclude "actes complementaires", the complementary diagnostic and treatment procedures which may accompany such base services. From 1971 to 1983, the average annual number of base services provided per physician in Quebec moved within the range 3154.66 to 3371.30, a variation of about 7%, finishing the period about 3% below its 1971 value. But an examination of Table 4-10 shows that there was a sharp drop reported between 1971 and 1972, with the low point for the period coming in 1972. The peak value is actually 1980. But the series is clearly trendless.

Yet in these twelve years, very large and rapid changes were taking place in major parameters of medical practice. The real value of fees fell over 40%, and apparent "real" billings per physician rose over 40%. The number of physicians per capita in Quebec rose over 50%! Yet the number of patient contacts stayed steady as a rock. It did not rise in the face of rapidly falling real fees, as a simple version of the "target income" hypothesis would suggest, nor did it fall in the face of rapidly rising numbers of physicians, as a simple version of the "exogenous demand" hypothesis might suggest. Patterns of medical practice appear to have had a life of their own, and a very stable one at that.

This finding might lead one to imagine a "revolving door" style of practice. As an ever-increasing number of physicians must divide up a very slowly growing pool of patients, each physician receives a smaller allotment, on average, and must therefore "re-cycle" each of that smaller patient load more frequently. This view would also suggest increased competition among physicians for the available patients. It is also, on the basis of a recently-completed study in Manitoba, probably wrong. Physicians do not compete for patients as physician-to-patient ratios increase; they share them.

The Manitoba study (Roch, Evans, and Pascoe, (1985)) found that between 1971 and 1981, the physician-to-population ratio rose 25% (when measured by estimated full-time physicians billing the Manitoba plan: active civilian physicians rose only about 20%). General Practitioners in Winnipeg, however, increased relative to the population by over 50%. Yet average billings per physician, Manitoba-wide, moved up in exact proportion to the fee schedule. The very rapid increase among Winnipeg General Practitioners was associated with reduced fee-adjusted billings per practitioner, but the fall was only 5.3%, in the face of a 55.7% increase in GPs per capita.

The key variable in this process appears to be the Apparent Patient Count (APC). This is the number of different patients seeing a particular physician, summed across all physicians, and thus weighting each Discrete Patient (real person) according to the number of different physicians he/she sees. Between 1971 and 1981, the APC for Manitoba rose 25.8%, almost equal to the increase in physician supply, while the Discrete Patient Count (DPC) (adjusted to exclude double-counting) rose only 11.9% and the population rose 3.8%. The average patient load per physician fell only 3.0%, easily compensated by an 8.1% increase in contacts per Apparent Patient.

The increase in physician supply was therefore not associated with any significant decrease in the patient load per physician, or any need for the physician to change significantly the pattern of servicing per patient seen. Rather each patient saw more physicians. Nor were these increased contacts formal referrals - at least they were not billed as such. The average patient simply showed up on the rolls of a larger number of physicians in 1981 than in 1971, but did not receive a proportionately reduced number of services from each. Winnipeg solo GPs in particular seem to have developed a sort of informal referral network over this decade, with a very large increase in the degree of patient sharing, and a correspondingly increased dollar amount of billings per patient. The increase in physicians contacted is most pronounced among elderly patients.

Data in this form, of course, do not resolve the issue of causality. Are patients "shopping" more frequently, or are physicians making more informal referrals? (We find the idea that very elderly patients, on their own initiative, increased the average number of physicians whom they chose to contact by about 40% and that total "shopping" increases by all patients were just sufficient to use up the time of the new physician entrants, rather implausible - but plausibility is in the mind of the analyst).

What is clear, however, is that whatever the causal mechanism, increases in physician capacity are associated with increased utilization, effectively in proportion, and the increase comes through increased networking and patient-sharing among physicians, not through increased competition and more intensive servicing by each physician of a decreasing patient load. Such a finding recalls Kessel's (1958) classic article on the organization of medical practice, and his emphasis on the importance of "cartel discipline" and of collective responses by physicians to prevent the outbreak of competition among their ranks. The more dependent individual practitioners are upon the referral network, whether formal or informal, the more powerful are group sanctions against individual behaviour. This finding thus has important implications for the feasibility of health policy initiatives which depend on the development of increased competition among physicians. Economic models may be myopic, but physicians are not.

The Manitoba findings may not, of course, apply to the U.S. with its rather different ideological environment and incomplete insurance coverage. But it should be recalled that Kessel was describing the U.S., and at a time when insurance was far less developed than at present, even in the U.S.

The response of service utilization to capacity, Roemer's Law for physicians, thus seems to be alive and well and living in Canada, as well as a great many other places. But the response of utilization, or at least fee-adjusted billings, to falling real fees is much less clear-cut' As Chapter 3 pointed out, there are a number of places in the historical record of individual provinces where one can quite clearly see a quantity response offsetting a fall in real fees. Such episodes are particularly common in the early 1970s, and most apparent in Quebec and Alberta. Selective reporting of these results could make quite a strong case for "target income" behaviour.

But there are also a number of province-year combinations in which fees change without an offsetting quantity response, or output per physician changes without any obvious link to fees. Some of these may of course be data problems. But the overall impression is one of a considerable diversity of behaviour, and of almost as many exceptions as rules.

The explanation of this diversity may be found in a reconsideration of the range of different behaviours which go to make up changes in the level of output per physician. What, exactly, does one hypothesize to happen, or not to happen, when physicians are confronted with limitations on their fees, say in the form of a fall in real fees? They are assumed to modify their practice styles so as to increase utilization, but in what ways ?

A quantity response could take the form of physicians working more hours, or increasing the volume of billing activity per hour worked. The latter could take the form either of increasing service output, or of re-labelling services so as to receive a higher reimbursement for them ("fee creep"). Increased service output per hour, in turn, can be achieved by speeding up throughput, by adding complementary services requiring little additional time and effort (the "while you're here" services), or by hiring assistants and delegating services to them.

Logically, it would appear that if physicians are to respond to fee restraints they must do so by one or a combination of these changes.

Again Quebec provides the clearest illustration of these possibilities. As reported in Chapter 4, between 1971 and 1976 the average annual number of base services or "contacts-patients" per physician was effectively unchanged - 3365.60 in 1971 and 3247.45 in 1976. But the number of "actes complementaires" - diagnostic and treatment services - per base service rose from .363 to .557, or 53.4%. These were procedures performed as adjuncts to an examination or consultation; surgical procedures separately identified also increased but at less than half the rate. Of course, since base services were rising in proportion to the physician supply, which was itself rising faster than the population, these "actes complementaires" actually rose by 95% per capita - in five years. Adjusted for changes in the fee schedule (which between 1971 and 1976 were almost nil) the cost of ACs rose from $9.08 to $17.59 per capita, or by $8.51. Since total fee-adjusted cost per capita rose from $44.52 to $70.53 over this period, it can be seen that increased average intensity of servicing associated with each patient contact made up about one third of the total increase.

But re-labelling was also very important. The number of examinations per capita - which accounts for about half of all billings - rose 23.4% between 1971 and 1976 - not quite as fast as the supply of physicians (31.5%). But the average fee per examination rose 20.1% - after adjusting for increases in the overall fee schedule. Physicians were billing an increasing proportion of complete and complete major examinations, instead of ordinary examinations, such that the average fee received per examination was rising rapidly even though the schedule itself was static. At the same time the frequency of consultations, which are reimbursed at three to four times the rate for examinations, was also rising rapidly. There were only 4.37 consults per hundred examinations in 1971, and 5.56, or 27% more, five years later. This is the most dramatic example of "fee creep" in the Canadian experience, although there may be more extreme examples in California (as there are of most things).

The increase in fee-adjusted cost per examination added $7.11 to the cost of medical services per capita in Quebec. Out of the total increase of $26.01 in costs per capita, adjusted for fee change, therefore, increased billings per examination and increased rates of complementary procedures accounted for $15.62 or sixty percent. Absent these changes, and the increase in fee-adjusted billings would have been only from $44.52 to $54.91, or 23.3% - less than the increase in physician supply per capita. Thus these two effects by themselves are sufficient to account for the Quebec "quantity response" during the years of most extreme pressure on fees.

Returning to the specification of the various ways in which physicians can expand utilization, therefore, it appears that in the Quebec case they did not react either by increasing hours or speeding up patient through-put per hour. Recall that "contact-patients" per physician per year remained unchanged. Such fragmentary data as is available tends to confirm that physician hours of work have tended to drift down, not up, over the course of the decade, and despite continuing complaints over the pace of work, there is no sign of increased workloads in terms of patients seen. Furthermore, as stressed in Chapter 1, the requirement that a physician must actually perform a service in order to be reimbursed for it, and the restriction of innovations in diagnostic imaging to the hospitals, where they are reimbursed on a global budget basis, have removed the most obvious opportunities for physicians to expand their billings by prescribing and directing the work of others. It is not, therefore, surprising that the expansion of output should come through the two remaining channels - service re-labelling and increased rates of complementary procedures.

Fee Control Is a Dynamic Process, Not a Static Shock

The Quebec experience also highlights what may be the most important feature of successful fee regulation - its on-going, interactive nature. As of 1976 that experience strongly supported the hypothesis that control of expenditures through fee control was ineffective, because of the quantity response. Then the provincial reimbursement agency negotiated a relatively generous fee schedule increase, such that the fee increase from 1976 to 1977 actually outran the general inflation level by a substantial margin, but the new schedule also consolidated into the examination fee a large number of the minor diagnostic and therapeutic procedures which physicians had been doing in conjunction with the visit, and at increasing rates.

As Chapter 4 shows, the number of billable "Actes Complementaires" per base service fell by over a third, and has remained absolutely stable from 1977 to 1983. The fall in costs of complementary services was much less dramatic, as it was the least expensive services which were consolidated. But the key point is that the major channel of service expansion was completely closed off by the new fee schedule. The increase in costs per examination continues to outrun the increase in the fee schedule, and the rate of consultations per examination continues to climb (by 1983 it was up to 6.33 per hundred examinations, 13.8% above its 1976 level). But both of these increases are proceeding at a slower rate.

The Quebec experience is merely the clearest representation of a pattern general across all the provinces. Any fee schedule, like any economic environment, regulatory or market, embodies a set of incentives to which transactors take time to adjust. The adjustment time itself will vary according to the familiarity or unfamiliarity of the process - people and organizations learn. Physicians respond to fee controls by changing their billing patterns to increase reimbursement under a given schedule. Reimbursers observe the evolution of billing patterns, and attempt to close off loop-holes at the next schedule re-negotiation. Although the general principles of schedule structure are agreed by both sides to be the prerogative of physicians themselves - rightly or wrongly Canadian reimbursers have not yet attempted to influence the practice of medicine through the fee schedule - egregious loop-holes in the billing process which add to system costs are always on the table for negotiation. Both sides recognize that they have a price in terms of overall schedule increases; and in an environment where what one side gets (or does not), the other side pays (or does not), there is no possibility of their not being negotiable.

Other types of loop-holes open up. In the late 1970s, Ontario physicians in particular used threats of large-scale opting out and direct billing of patients to negotiate higher fees, apparently successfully. B.C. physician negotiators claim to have done the same in 1982, although the episode bears other interpretations. The 1984 Canada Health Act will either close that avenue of attack, or at least make it much narrower - unless its provisions are found unconstitutional. Those provinces which permit some physicians to operate private laboratories, although under license, are finding utilization and costs escalating relatively rapidly in that area. Provinces with conservative governments may find it ideologically uncomfortable to interfere with this form of "free enterprise" - or at least to be seen to do so - but as the costs climb, interfere they will. The 1985 fee agreement in B.C. embodies a form of global cap such that if servicing increases beyond projections, reimbursements are reduced pro rata. While no data are yet available, it is rumoured that physicians are reducing their rates of use of diagnostic services. One way or another, the reimbursers will deal with the private lab issue - in the end they have no choice.

Of course some other issue will arise, and it too will be dealt with, well or badly, in each of the provinces. The crucial perspective is that of an on-going dynamic relationship, a sort of game, in which one side or the other gains ground, but "wins" and "losses" are not absolute. The outcome is simply the history of the game. Economists in particular tend to approach such a process from an inappropriate perspective, as they have been habituated to static equilibrium models of transaction processes. A single external shock - a price regulation -

is assumed to be imposed on a system, such as the provision and reimbursement of physicians' services, and then one stands back to see what the eventual result will be. In response to such a one-time shock, the system has the maximum opportunity for self-protective adaptive response.

And indeed U.S. attempts to regulate physicians' fees often seem to take this form - impose a rule, and then jump back quickly, because follow-through might be hazardous. But if one is instead part of an interactive game, then there is a sequence of moves. The system responds, and then the reimburser responds. Both sides learn by doing, and neither side can leave the game.

This difference in perspective and behaviour, in turn, follows from the universal, public structure of the Canadian system. Canadian attempts to limit fee escalation have to be serious, because the public negotiators are spending their own money. If they "lose", either on the fee levels or on the quantity response, the conversations with Treasury Board and in Cabinet will not be pleasant. The minister could, in extreme cases, be sacked. But at the same time, while the stakes are higher for regulator/reimbursers, universality gives them a great deal more leverage in the bargaining situation. The opportunities for physician end-runs are much more limited, both politically and administratively. Thus universality has turned out, ironically, to lead not to cost explosion but to cost control; and as the evidence assembled above makes clear, limitations on the escalation of physicians' fees have served unambiguously to limit the escalation of expenditures.

A generalization such as "freezing or reducing payment levels is not effective in controlling program expenditures because physicians respond by increasing the quantity and complexity of services provided", is therefore, like all generalizations, false. As a description of what experience has been, in the context of a system with multiple, fragmented, and often unmotivated reimbursers and regulators, it may well be true. As one U.S. commentator puts it, where regulatory agencies are afraid of their own shadows, they are unlikely to do anything effective. Whether effective cost control through fee control could ever be possible in the U.S. context is a broader question which we have not addressed. The Canadian experience forbids one to say that, in an absolute sense, it cannot be done: it may however be true that Americans cannot do it.

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